DOCUMENT RESUME

ED 259 863 RC 015 391

AUTHOR	Riley, Cheryl L., Comp.
TITLE	Ideas that Work for Outdoor Teachers and Leaders. Papers, Activities, and Resources from the National Outdoor Education Conference (Potosi, Missouri, October 9-13, 1985).
INSTITUTION	American Alliance for Health, Physical Education, Recreation and Dance, Reston, VA. Council on Outdoor Education.; ERIC Clearinghouse on Rural Education and Small Schools, Las Cruces, N. Mex.
SPONS AGENCY	National Inst. of Education (ED), Washington, DC.
PUB DATE	Sep 85
CONTRACT	400-83-0023
NOTE	158p.
AVAILABLE FROM	ERIC/CRESS, BOX 3AP, Las Cruces, NM 88003 ($8.50).
PUB TYPE	Information Analyses - ERIC Information Analysis Products (071) -- Collected Works - Conference Proceedings (021) -- Guides - Non-Classroom Use (055)
EDRS PRICE	MF01/PC07 Plus Postage.
DESCRIPTORS	*Adventure Education; *Conservation (Environment); Conservation Education; Curriculum Development; Elementary Secondary Education; Enrichment Activities; Environmental Education; *Ethics; Experimental Teaching; Field Experience Programs; Learning Activities; Outdoor Activities; *Outdoor Education; Program Descriptions; Program Development; *Recreational Activities; *Resource Materials; Skill Development
IDENTIFIERS	Outdoor Recreation

ABSTRACT

Emphasizing the ethics of conservation, this conference report compiles the following information submitted by conference presenters: (1) summaries of their presentations; (2) environmental ethics statements pertinent to their subjects; (3) activities; (4) favorite quotation; and (5) resources and references including books, journals, organizations, and individuals. The 56 presentations cover a wide range of topics in outdoor education and conservation including leadership, legal liability, curriculum development, program rationale, and the establishment of outdoor education centers. Specific learning activities are also covered, e.g., rappelling, primitive fire making, basic archery, canoe trip planning, orienteering, fly fishing, shooting sports, and field trips. Ranging from 1 to 13 pages, the presentation summaries vary from general to detailed with some including specific suggestions for teaching, e.g., a presentation on ornithology includes plans and instructions for building a bluebird nesting box. Resource and reference sections constitute a significant portion of the material with most presentations citing at least five sources. A session on using children's literature to enhance nature awareness includes a bibliography of 27 books related to 5 environmental themes, and a presentation on causes and consequences of species extinction provides a 6-page list of resources. (JHZ)

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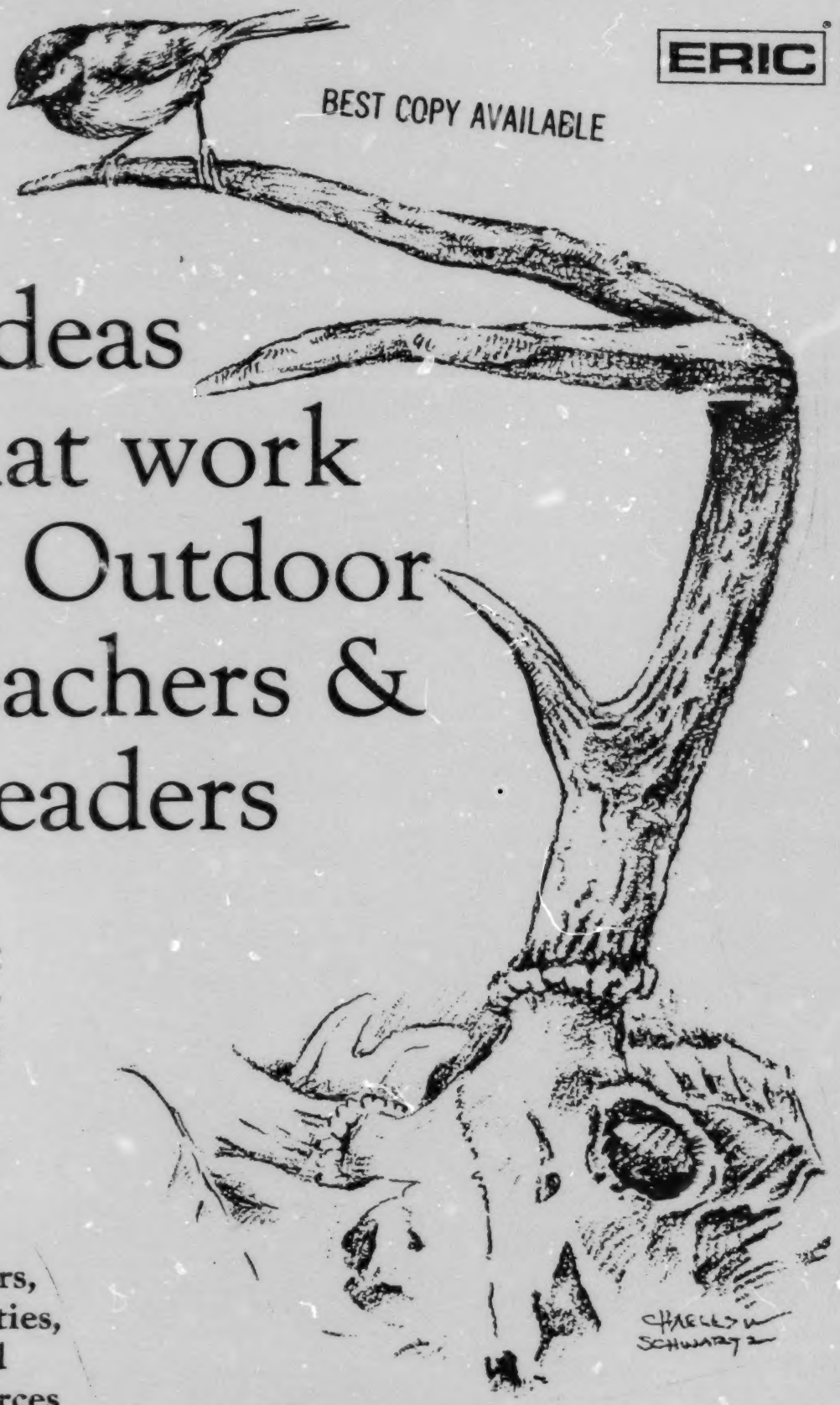

Ideas that work for Outdoor Teachers & Leaders

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Papers, Activities, and Resources from the 1985 National Outdoor Education Conference

IDEAS THAT WORK
FOR OUTDOOR TEACHERS AND LEADERS

Papers, Activities and Resources
From the 1985 National Outdoor Education Conference

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A Cooperative Publication
of

ERIC Clearinghouse on Rural Education and Small Schools
New Mexico State University
Las Cruces, New Mexico 88003

and

The 1985 National Outdoor Education Conference
October 9-13, 1985
Potosi, Missouri

September 1985

This publication was prepared with funding from the National Institute of Education, U.S. Department of Education under contract no. NIE 400-83-0023. The opinions expressed in this report do not necessarily reflect the positions or policies of NIE or the Department of Education.

Introduction

"Teach the young, for they shall inherit what is left."

What shall we teach them? What will we leave them?

The papers, activities and resources from the 1985 National Outdoor Education Conference are your challenge to ponder, resolve and act on the answers to these questions. Here is the grist...now you must turn the wheel.

For those who attend the conference, this book is a preview of many of the presentations. You can consider more closely what sessions to attend and where to go for follow-up information.

For those who can't attend the conference or will miss one session to attend another, this book is your resource guide to the subjects. Perhaps not quite as good as being there, but useful nonetheless.

Conference presenters were asked to send in the following: a summary of their presentation; an environmental ethics statement pertinent to their subject; activities they would be doing; a list of resources or references including books, journals, organizations or individuals; and any favorite quotes. Almost two-thirds of the presenters responded to the deadline, even though it was more than four months before the conference.

The emphasis on ethics corresponds with the daytime program theme "Planting the Seed of a Conservation Ethic." The success of the conference and this booklet, however, rests with teachers and leaders who realize the opportunities of using the outdoors to teach the important lessons of how to enjoy, appreciate and use responsibly our natural world.

Publication of this material was made possible through the efforts of Elaine Roanhorse Benally and others at the ERIC Clearinghouse on Rural Education and Small Schools (CRESS). It is published in conjunction with the centennial year of the American Alliance for Health, Physical Education, Recreation and Dance, which through the Council on Outdoor Education, has helped sponsor the National Outdoor Education Conference in past years. This year's conference has been a cooperative effort of many state and national organizations. Funding for the book was paid in part by the Izaak Walton League of America Endowment.

Anyone wanting to purchase a copy of Ideas That Work For Outdoor Teachers and Leaders should write to ERIC/CRESS, Box 3AP, Las Cruces, New Mexico 88003.

Cheryl Riley
Conference Director

Welcome to the 1985 National Outdoor Education Conference . . .

A Conference Challenge

Text and photos by
Robert Lindholm
Assistant Attorney General
Jefferson City, Missouri

Shining Mountains © Bob Lindholm 1985 Used by permission

At one time this country stretched endless beyond the horizons, beyond people's needs, beyond their wants, beyond their knowledge, even beyond their imaginations. At first its sole human inhabitants were native Americans, and its resources were not overtaxed. Then into the country came new peoples, escaping old cultures and depleted lands. They looked to the land for freedom and here they found it, for to them the land, the water and the wildlife seemed endless. As Jedediah Smith was to write: "These shinin mountain vallies are too firtel to go unnoticed much longer. St. Louis and St. Jo will become the trailhead for one of the largest migrations of human souls the world has ever known."

Indeed, the prairies and the mountains beckoned, challenged and led streams of civilization through the passes and over the rivers, and it seemed that there would always be more than enough. The land was beautiful but harsh, and it bred a strong people who proved equal to the challenge.

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Unlike the Indians, the new settlers' demands on the land knew but few bounds, and their relation to the land was not reverence, but possession. They became aware only gradually that there were limits, after they gazed on lands end and the vastness of the Pacific Ocean, after they saw the changes—clear cut slopes, disappearing buffalo herds, and more and more people moving, settling and exhausting the resources. This awakening awareness stirred Theodore Roosevelt to express his concerns in his invitation to a Conference of Governors on conservation in 1908:

The natural resources of the United States were, at the time of settlement, richer, more varied, and more available than those of any other equal area on the earth.

* * *

It is obvious that the prosperity which we now enjoy rests directly upon these resources.

* * *

We are prosperous now; we should not forget that it will be just as important to our descendants to be prosperous in their time.

Recently, I declared there is no other question now before the nation of equal gravity with the question of conservation of our natural resources, . . . [and] not to destroy in advance all hopes of the prosperity of our descendants.[1]

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Had it not been for Theodore Roosevelt, the land might be different, more depleted, now. Even so, his warnings were forgotten by many. Fortunately, one man—Aldo Leopold—remembered. He perceived the common destinies of man and the land and their effect on each other. He understood that the wealth of mankind and the land is more than those things that we take from it or build on it. Ruling on a challenge to that state's Environmental Right's Law, the Minnesota Supreme Court turned to the wisdom of Aldo Leopold:

Little Deer © Melissa Lindholm 1977 Used by permission

All ethics so far evolved rest upon a single premise: that the individual is a member of a community of interdependent parts. His instincts prompt him to compete for his place in the community, but his ethics prompt him also to co-operate (perhaps in order that there may be a place to compete for).

The land ethic simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively: the land.

* * *

In short, a land ethic changes the role of Homosapiens *from conqueror of the land-community to plain member and citizen of it. It implies respect for his fellow-members, and also respect for the community as such.*[2]

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Too many of us have not yet learned the lessons of Roosevelt and Leopold. Their vision is still beyond us, and our efforts have flagged. While our numbers and desires increase, the land and water do not. We exhaust our natural resources by our new demands on the earth. The canary still sings in the mine, but its song is now of questions:

What do we want to leave for our children?

What will we consume that they may never use or enjoy?

What do we want to protect?

What will we exhaust and what will we conserve?

Will we have the intelligence to react before there is crisis, while there still is time?

In many parts of the world the land already has suffered too much from lack of respect, and the people now suffer. In those places there already is crisis.

Imagining © Bob Lindholm 1977 Used by permission

What do we want to leave for our children?

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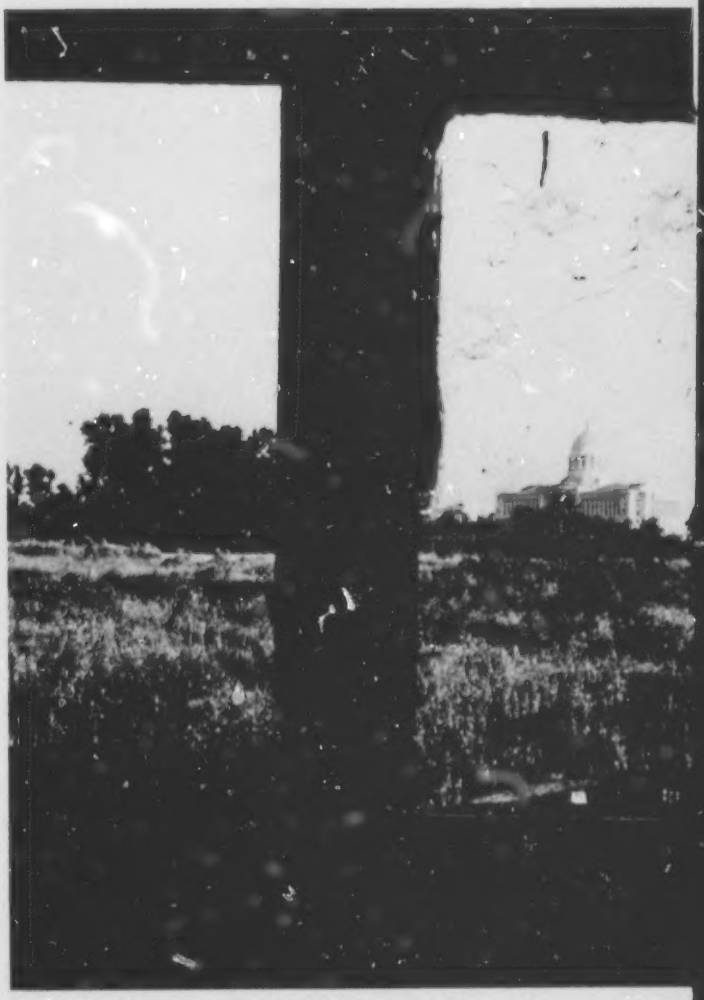
It is easy to say we should have respect for the land, air and water. Honoring this respect, however, is much harder. We call upon our natural resources to serve many wants and needs: recreation, raw materials, hunting, fishing, highways, cities, farmlands. The list seems endless, as the land once did. Our appetites increase and our generation uses far more resources than those who came before us. Even with the threat of depletion and extinction, our appetites are not abated and our lifestyles resist change.

Freedom in this country was born and nurtured on the land, the next bend, always a new frontier. That freedom today will survive only if we find ways to intelligently share, conserve and renew our natural resources. It will survive if we determine how to pull together our myriad interests and demands. That is our job. Our choices will lead us toward a healthy future—or disaster. And as Teddy Roosevelt said, our children must live in the shadow of our decisions.



Hand of Man © Bob Lindholm 1981 Used by permission

Life Cycles © Bob Lindholm 1978 Used by permission

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In a November 1981 article commemorating the life and works of Aldo Leopold, *National Geographic* stated the problem, its many facets and its persistence:

In the past ten years we have created numerous environmental laws and institutions of government and cleared up some polluted lakes and streams. But our striving suggests that as in Leopold's [and TR's] time we seem to be good for a few years of righteous flexing yet lack endurance. Our patience is short and our self-interest deep. Lately our attention has drifted to the price of fuel, the shrinking dollar, the rumble of thunder from that part of the world on which we increasingly depend for a drive in the country [and more lately arming the heavens before we have secured the earth]. So we bend to digging up the West and probing the continental shelf for solutions. Confused and angered, we may look upon environmental laws, rather than our appetites, as the source of our discontent. What was gained by one alarm may be lost by another.[3]

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Falling Spring © Bob Lindholm 1980 Used by permission

Kenneth Clark wrote in *Civilisation*: "A margin of wealth is helpful to civilisation, but for some mysterious reason great wealth is destructive. I suppose that in the end, spendour is dehumanising, and a certain sense of limitation seems to be a condition of what we call good taste."[4]

In essence, good taste, or ethics, is what the Supreme Court of the State of Minnesota was speaking of in its opinion quoting Leopold. For as Leopold also wrote:

We of the industrial age boast of our control over nature...there is no force in earth or sky which we will not shortly harness to build 'the good life' for ourselves. But what is the good life? We stand guard over works of art, but species representing the works of aeons are stolen from under our noses....[5]

Like winds and sunsets, wild things were taken for granted until progress began to do away with them. Now we face the question whether a still higher standard of living is worth its cost in things natural, wild, and free.[6]

It is as David Brower observed many years ago, that what we are capable of doing is not always what we ought to do, and our use of the earth must show that this generation, our own, had love for the next.

We at this conference will search for valuable foresight and understanding in the quest for a conservation ethic. We will meet in the beauty of autumn, in a natural setting where as Jack Hines observed:

The most basic wisdoms of mankind are of an eternal nature. Modern technology notwithstanding, there is a fundamental need for the human animal to feed a sense of self-sufficiency; a belief in one's self and one's abilities. That which man can perform with

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Eternity
is in the mountains,
the open sky,
and the forever trees
of the high country

It blooms
in the meadows
and
flows
down
arroyos

and, from the hands
of the old ones
to those of the young
it is passed along.

© Jack Hines 1980 Used by permission

his own hands is central to his feelings of security.

And the passing of knowledge from the hands of one generation to another is teaching in its most beautiful form, born of love and concern between teacher and learner.

To be in such a situation, teaching and learning, in the depths of natural surroundings, where all of life is on a basic level, is a thing of beauty, tenderness, understanding and deep strength. It is the quintessence of knowledge having been acquired, its use experienced, its quality matured and expanded and then "passin' it on."[7]

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[1]*Proceedings of a Conference of Governors in the White House* (Washington, D.C., May 13-15, 1908), pp. ix-x.

[2]Aldo Leopold, *A Sand County Almanac* (New York: Oxford University Press, Inc., 1949) p. 102.

[3]Boyd Gibbons, "The Natural World of Aldo Leopold," *National Geographic*, November 1981, p. 708.

[4]Kenneth Clark, *Civilisation* (New York: Harper & Row, 1969), p. 253.

[5]Gibbons, "The Natural World of Aldo Leopold," *National Geographic*, November 1981, pp. 690-691.

[6]Ibid, pp. 706-707.

[7]Jack Hines, "Eternity Is in the Mountains" (Venice, FL: Mill Pond Press Inc., 1980)

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Table of Contents

Page

iii Introduction
iv A Conference Challenge

I. ADMINISTERING/TEACHING OUTDOOR ACTIVITIES
1 ..... How To Add Rappelling to Your Outdoor Education Program
15 ..... Legal Liability: Implications for Outdoor Adventure Activities
21 ..... Outdoor Emergency Survival
24 ..... Safety and Liability
25 ..... Thematic, Interdisciplinary, Experiential Education
32 ..... Who's In Charge?--Maintaining Leadership

II. OUTDOOR EDUCATION ACTIVITIES
35 ..... A Circle of Campfire Fun
36 ..... Aquatic Education
40 ..... Canoe Trip Planning
44 ..... Caving as a Tool in Outdoor Education
48 ..... Curriculum Development for Conservation
52 ..... Jerky Making and Smoker Construction
53 ..... Map and Compass
56 ..... Ornithology Activities
59 ..... Outdoor Education--An Essential Sixth Grade Curriculum
62 ..... Patterns in Wildlife Habitats
64 ..... Shooting Sports in the College and Community: How To Begin and Carry Out Programs for Young Shooters
70 ..... The Bittersweet Experience
73 ..... The Fast Track to Flyfishing Fame, Fortune, Fun and Education
76 ..... Using Children's Literature To Enhance Nature Awareness
80 ..... Youth Leadership Development

III. SESSION DESCRIPTIONS WITH RESOURCES/REFERENCES
82 ..... Air Gun Programs for Schools and Camps
83 ..... Animal Signs
84 ..... Basic Archery
85 ..... Butterfly Gardening and Conservation Around the Home, School and Nature Center
87 ..... Conservation Seeds: An Early Childhood Conservation Education Program
88 ..... Developing Outdoor Classrooms and Tour of Dogwood Diggins Outdoor Education Area
94 ..... Environmental Studies by Bicycle

96 ..... Extinction: Causes and Consequences
103 ..... Missouri Department of Conservation Education Unit's Secondary School Program and Deer Game
105 ..... Primitive Fire Making
106 ..... Regional History Tour
108 ..... Ropes Course--Adventure Education
109 ..... The Cemetery--Another Place for Outdoor Study
110 ..... The Future of Outdoor Recreation Depends on You
112 ..... The Use of Live Specimens in Raptor Education
115 ..... University Outdoor Venture Recreation
118 ..... Water Quality Indicators
119 ..... Wild Edibles
120 ..... Wilderness Medicine
121 ..... Wildlife In America: Competing Uses, Common Grounds Over Time
123 ..... Writing for the Outdoors

IV. SESSION DESCRIPTIONS
125 ..... A Comprehensive Outdoor Education Center Model: The Making of Bradford Woods
126 ..... Archaeology in the United States: Conserving the Past
127 ..... Art Activities and the Conservation Ethic
128 ..... Conservation Education Program and Services Available from the Missouri Department of Conservation
129 ..... Environmental Education/Outdoor Education: A Research Based Activity Approach
131 ..... Learning With Otis
132 ..... Live Animals in the Classroom
133 ..... Minimal Impact Camping
134 ..... Missouri Conservation Frontiers
135 ..... Pottery From the Ground Up
136 ..... The North American Indians: Their Crafts and Technologies
137 ..... Using the Consortium Approach to Outdoor Education
140 ..... Why the Wilderness Calls
141 ..... Wilderness Environs and Self Discovery

142 ..... Index

I. ADMINISTERING/TEACHING OUTDOOR ACTIVITIES

How To Add Rappelling to Your Outdoor Education Program

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Baylor University
Waco, Texas 76798

I. Rappelling defined--descending by sliding down an anchored rope using friction to control descent
II. Uses of rappelling
    A. In mountaineering
        1. To descend in an easier manner a section that is difficult to downclimb
        2. To descend faster a section that is difficult to downclimb
    B. Non-climbing uses
        1. To build confidence
        2. For fun
        3. As an instrument for learning about various aspects of mountaineering
III. Current interest in rappelling
IV. Some basic considerations in teaching rappelling in educational and recreational settings
    A. Reasons for teaching rappelling in educational and recreational settings
    B. Problems encountered in teaching rappelling in educational and recreational settings
    C. Some ingredients of a good school or recreational program
        1. Teacher (experienced, capable, accurate, thorough, careful)
        2. Safe facility (natural or man-made). Don't forget health factors such as poison ivy, etc.
        3. Good equipment
        4. Theory sessions
        5. Approval of important persons and groups (superintendent, principal, supervisor, director, legal counsel, parents, etc.)
        6. Release of legal liability/awareness statement/ compliance statement signed by student (and parents if student is a minor)
        7. Free will participation of students

8. Rappel only well within the ability level of each individual student
9. Double check each other at all times
10. Good anchors
11. Other

V. Think Safety. Some words of caution about some of the most dangerous rappelling situations
   A. Bad judgment--the primary cause of climbing accidents
      --perceive situations accurately and do not go beyond the limits of your ability and equipment. Your erroneous perception of reality can be corrected very rapidly by the ground getting friendly and rushing up to meet you.
      --Those who would rappel and live must use good judgment. The penalty for bad judgment can be severe. The ultimate penalty is very severe.
      --Know where the line between challenge and folly is.
      --If in doubt, don't. Gravity is a very consistant and powerful force. Don't become a statistic. The mountain will be there tomorrow.
      --"...courage and strength are naught without prudence, and a momentary negligence may destroy the happiness of a lifetime. Do nothing in haste; look well to each step; and from the beginning think what may be the end."--Edward Whymper
   B. Equipment failure--can be avoided by not putting all trust in any single part of the safety chain. Using 2 instead of 1 can almost eliminate equipment failure.
      --Leave nothing to chance
      --Equipment can give a false sense of security. Inadequate equipment or a faulty protection system can be worse than no equipment or protection at all.
   C. Competition
      --"But accomplishments lead to praise, praise to envy, envy to competition, competition in a game like this to climbing beyond one's limits--that morbid note...all because competition led them to try what they wouldn't have attempted for the pure joy of climbing."--Royal Robbins

VI. Technical equipment needed for rappelling (usually furnished by the school/agency)
  A. Ropes--a rappeller trusts his life to his ropes. They must be selected and used with care.
    1. Number needed--3 available for use at all times
      a. Rappel
      b. Belay
      c. Rescue
    2. Materials
      a. Goldline, Skyline
      b. Perlon
    3. Construction
      a. Kermantle (core and sheath)
      b. Laid (hawser-laid, twisted, cabled)
    4. Diameter
      a. 11mm--single rope. As weight of the rope is not a consideration in almost all rappelling classes, 11mm is the best size
      b. 10.2mm
      c. 9mm--use as a double rope only. The smallest rope on which a person should rappell. Is more easily cut than a larger rope
      d. 7mm--for hauling only. Should never be used for rappelling
      e. 7/16"--see 11mm
      f. 3/8"--see 9mm
      g. 5/16"--see 7mm
    5. Length
      a. 180'--longest practical rope
      b. 165'
      c. 150'--sufficient for most routes
      d. 120'--the shortest useful climbing rope
      e. 80'--a backpacker emergency rope
      f. If you rappel at the same place at all times, you can use a rope, the length of which is selected for the height of that particular rappel
    6. Water resistant characteristics
      a. Everdry
      b. Regular
    7. Handling characteristics
    8. UIAA (Union Internationale des Associations d Alpinisme) rope standards.

B. Accessory Ropes--To be used as prusik slings. 1/4" or 5mm, 2 or 3 feet long. Up to 5/16" or 7mm will do, but not as well. The nearer the 2 ropes are in size, the less efficient the prusik will be.

C. Webbing
   1. Uses in rappelling
      a. Harness
         (1) Diaper Sling
         (2) Chest Sling
      b. Link between anchor and climbing rope
   2. Purpose--anchors are frequently sharp or dirty and will damage a climbing rope. The webbing is used to take the abuse the climbing rope would take.
   3. Length--the sling may be of average length (5' - 6'), long (10'), or triple length (15'). Long runners/slings can be shortened by tying a knot, and short slings can be lengthened by adding another loop.
   4. Size webbing--1" soft tubular nylon webbing
   5. Care of ropes and webbing
      a. Enemies of ropes and webbing
         (1) Sharp objects
         (2) Dirt
         (3) Heat
         (4) Petroleum products
         (5) Sunlight
         (6) Improper use--Use only for climbing
      b. Cleaning
      c. Storage
      d. Inspection--after each climb and during climb when damage is suspected
      e. Fuse and tape ends
      f. Mark middle with electricians plastic tape only
      g. When to throw away
      h. Do not use someone else's ropes or slings unless you are sure they are not damaged
      i. "Pardon me, you are stepping on my life."

D. Seat harness--use only with chest harness
   1. Diaper--about 10', advantages, method of attachment
   2. Home-made seat harness--about 22', advantages, method of attachment
   3. Commercial--advantages, method of attachment

E. Chest Harness--use only with seat harness
   1. Webbing--actually just a longrunner about 8', advantages, method of attachment
   2. Commercial--advantages, method of attachment

F. Swami belt--inappropriate for rappelling when used without a chest harness and without leg loops to form a seat harness.

G. Hard hat--approved for climbing, adjustable is best, all sizes, must be fastened when in use.

H. Carabiners (karabiners)
   1. Defintion--strong enlongated circular metal devices with a spring-closing gate which screws to clip together pieces of protection or aid systems.
   2. Types
      a. Locking or standard
      b. Oval, D, or other
      c. Aluminum or steel

      Note: Do not throw metal equipment. If a metal piece is dropped it may become unusable because of cracks in the metal which are invisible to the eye. Have the dropped piece of equipment checked by the manufacturer before use. Do not file, engrave, or otherwise weaken any piece of equipment.

I. Ascenders--used to ascend a rope. The device permits the rope to move one way, but not another. The leader should have a means of descending a rope and stopping at any point to assist an injured, stranded, or scared student.
   1. Types
      a. Prusik slings
      b. Jumar
      c. Clog
      d. Gibbs
   2. Tips for use
      a. Be sure the safety latch is in the correct position
      b. Be sure rope is clean
      c. Tie a large knot in the end of the rope and place a carabiner in it. Tie a figure eight closer to the climber about every 20' as he goes up. Tie the climber to the rope. The nearer to the climber the tie-in, the shorter the fall. Attach the climber to each

ascender. Also attach the climber to a prusik which is attached to the climbing rope between the ascenders.

d. Belay.

J. Descending rings--aluminum rings placed on nylon slings to prevent the nylon sling and the rope from rubbing against each other, causing weakening and perhaps total cut-through. Never attach nylon to nylon!

K. Friction-producing devices--a metal device used to wrap the rope around to produce friction, thus permitting a climber to control his descent or a belayer to stop a falling climber.

1. Uses
   a. Belay
   b. Rappel
2. Types
   a. Figure 8
   b. Variation of figure 8
   c. Stitch belay plate
   d. Other
   e. Brake bar--used in rappel only
   f. Carabiner rappel configuration

L. Pulleys--used to gain a mechanical advantage in moving loads (people who need rescuing, large equipment loads, etc.) It is probable that a pulley will not be needed to rescue a person in trouble in a normal class setting.

M. Padding--to protect the ropes as they move over sharp objects or dirty stretches. Carpet is best; other fabrics are satisfactory.

N. Gloves--all sizes; all leather or leather palm at least; all sizes, for both left and right hand.

O. Haul bag--to put gear into at the bottom to return to top, if the location does not permit easy walk-up.

P. Line--to attach a haul bag. Must be longer than the length of the rappel.

VII. Personal gear/clothing needed for rappelling

A. Shoes

B. Pants--long; loose fitting is best; jeans are o.k.

C. Shirt--long sleeve best

D. Caution--no clothing, jewelry, hair, etc. should be loose enough to get caught in the rappelling apparatus or to create any other safety hazards.

VIII. Knots

A. Importance of knowing good knots
--The finest rope in the world will not protect if it is tied with a faulty knot.

--One wants to tie his own knots, rather than entrust his life to someone else by having them tie his knots.
--A person must be able to tie knots when tired, cold, even hurt.
--Check knots frequently on a climb.
--Never invent your own knots.

B. Characteristics of a good knot
   1. Easy to tie
   2. Does the intended job
   3. Easy to untie
   4. Affects the rope materials as little as possible
   5. Has strong breaking strength

C. Types of knots needed in climbing
   1. Tie a knot in the end of a rope
      a. Overhand
      b. Figure 8
   2. Tie the ends of 2 ropes together
      a. Fisherman's knot
      b. Double fisherman's knot
      c. Water knot (ring bend, overhand knot, overhand follow-through)
      d. Figure 8 follow-through (double figure 8)
   3. Tie a loop in the middle of a rope
      a. Butterfly
      b. Figure 8 loop
      c. Overhand loop
   4. Tie the end of a rope to something or someone
      a. Bowline--should be able to:
         (1) Tie to an object, and
         (2) Tie around self with one hand
      b. Double bowline
   5. Attach a loop to a rope which will not move when pressure is applied to the outer side of the loop, but which will slip when pressure is applied to the knot--the prusik knot
   6. Attach a loop to something--girth hitch
   7. Tie off the loose ends of a knot--<u>always</u> tie off the loose ends of a knot.
      a. Overhand
      b. Half-hitch

IX. Protecting--belaying
- A. Definition--use of an anchored rope by the belayer to reduce the length of a fall and prevent or reduce the consequences of the fall to the climber.
- B. Importance of belaying--Done well, a belay can save lives. Done improperly, it can be an agent of doom. It can be a safety tool or a deadly device. The belay is the last chance to avert a fall.
- C. Importance of the role of the belayer--When a climber falls, the safety of the climber is dependent on the belayer. There is not much a climber can do for his own safety during a fall.
- D. When to belay--Belay at <u>all</u> times in teaching rappelling.
- E. Components of the belay chain
  1. The anchor and its components
  2. The belayer and his components
  3. The rope and its knots
  4. The climber and his components
     --There are many places for things to go wrong. The belay chain is only as strong as its weakest link.
- F. Types of belays based on location
  1. From above (static belay, no slack)
  2. From below (dynamic belay, running belay)
  3. From below--pull on end of rappel rope to produce sufficient friction to slow or stop a rappeller who is descending too fast
- G. Types of belays based on how friction is produced
  1. Manual
  2. Mechanical devices
     a. Stitch belay plate
     b. Figure 8
     c. Other
- H. Importance of stability of the belayer--The strongest position is the sitting hip belay. The belayer sits, legs straight, feet firmly braced if possible.
- I. Importance of comfort of the belayer--may be there for a long time.
- J. Anchors--must be solid. In a class setting always use bombproof anchors. If everything else fails, 2 climbers may be hanging from it. A high belay anchor

is better than a low one, because it lets the rappeller begin from a more comfortable position. To preserve rock, use protection in the following order:

1. Natural
   a. Trees
   b. Horns--A horn belay must be high
   c. Other
   d. Use slings and descending rings to protect the rope from damage by the anchor. If the sling is likely to be damaged, protect it from being cut
2. Chock (nut)--Do not use a chock for an anchor in a rappelling class.
3. Piton--Do not use a piton for an anchor in a rappelling class.
4. Expansion bolts--Do not use expansion bolts as anchors in a rappelling class.
5. On snow--Do not use an anchor placed in snow in a rappelling class

K. Two anchors--When two anchors are used for one rope, they should be separate and independent of each other. Use runners long enough to produce a small angle. The smaller the angle, the less the force on the anchors.

L. Use of hands in manual belaying.
   1. Rope movement (feeling, sliding, guiding) hand
   2. Braking (holding) hand--During the belay, NEVER let go of the rope with the braking hand.

M. Tie-in of the belayer to anchor--Both the belay rope and the belayer should be tied to the belay anchor. There must be no slack between the anchor and the belayer. A long distance between the anchor and the belayer is undesirable. The anchor is away from the climber, the rope is toward the climber. The belayer is facing in the direction of the pull.

N. Placement of the rope around the belayer's body in manual belaying--Place the rope just below the tie-in to the belayer. If the belayer is clipped in with a carabiner, do not run the rope through that carabiner, because this arrangement may prevent enough friction being produced to hold a fall. Proper placement of the rope on the body can be enhanced by running the rope through a carabiner attached to the swami belt on the braking hand side of the body.

O. Line of pull
   1. When belaying from above, the line of pull will be from the climber, unless the rope has gone around some object.
   2. When belaying from below, the line of pull will be from the first protection, not from the climber.
   3. An aiming point can be created by placing safety protection (either natural or artificial) to insure the line of pull you want. This "manufactured" aiming point prevents unexpected changes in the direction of the pull.

P. Tie-in for the climber

Q. The belay process while climbing

R. When to go off belay

S. Importance of being securely anchored when not climbing

T. Verbal signals--The following is a usual sequence. An asterick (*) designates which must be answered before action is initiated.

RAPPELER	BELAYER
1. On belay*	2. Belay on
3. Rappelling*	4. Rappel
5. Off belay*	6. Belay off

Other rope signals:
1. Testing*
2. Up rope
3. Tension
4. Slack
5. Falling
6. Off rappel

U. One means of descending--rappelling (abseiling, roping down)
   A. The wisdom of belaying the rappeller--in a class setting, you must have a secure top belay.
   B. Use prusik as a self-belay during the rappel. The prusik must be short.
   C. Anchoring the rappel rope
      1. Security--Always use natural or safe man-made anchors. Never rappel in class from chocks, pitons, or bolts. Always use at least 2 anchor points if possible. Most rappel accidents are due to anchor failure.

2. No nylon against nylon.
3. Test the anchor by stepping on a sling and exerting pressure (while being belayed).

D. Protection of the rope
E. Number of ropes
   1. Single rope doubled
   2. Single rope
   3. 2 ropes
F. Ways of creating friction (thus controlling body descent) during rappel.
   1. Body (dulfersitz, dulfer) rappel--Place rope between legs, under leg on brake hand side, diagonally across chest, over opposite shoulder, behind back to brake hand. Beware of turning upside down. Padding, usually in the form of a rappel pad, must be worn to prevent skin damage.
      Be sure the leg does not unwrap.
   2. Sling or harness rappel--same as above, except that rope goes from carabiner attached to sling to shoulder, thus eliminating the wrapping of the rope around the leg.
   3. Brake bar rappel.
   4. Multiply carabiner rappel--one parallel to rope, 2 (with gates reversed) perpendicular to rope. Friction can be increased by adding more carabiners.
   5. Figure 8 rappel--the most foolproof
   6. Stitch belay plate
   7. Other
G. Techniques and tips
   1. Before starting, be sure the rappel is long enough to reach a place of safety.
   2. Double check everything. There are many parts of the rappel/belay chain that can go wrong.
   3. Snapping in
   4. Signals
      a. "on rappel"
      b. "rappel"
      c. The usual belay signals
   5. Going over the edge--Stay perpendicular, not horizontal to the surface. Keep feet wide and flat. Put the weight on the harness, not the feet. Don't lean over backwards, or you will flip upside down.

6. Move steadily. Do not jerk. Avoid "Hollywood" bounds, as these put undue stress on all parts of the system.
7. Beware of going too fast because the heat can become quite uncomfortable.
8. How to deal with a convex section (overhang).
9. Do not lean back too far. Use a chest harness in all class situations.
10. Attach belay anchor to other than rappel attachments.
11. Use of hands
    a. Balance hand
    b. Brake hand
        (1) Rope straight to side, or
        (2) Rope behind back
        (3) Do not let go of the rope with the braking hand!
12. Look where you are going, not up. Vision is enhanced by facing 45 degrees toward the braking hand.
13. Send equipment down on a haul line if it is a problem. This should not be a factor in a class setting.
14. Always tie a knot in the end of the rope and place a carabiner in the knot. This will prevent the rappeller from rappelling off the end of the rope.
15. To tie off the rappel and stop in mid-rappel, wrap the rope 2 or 3 times around the leg.
16. Unfasten the waist belt on the backpack, so if you turn upside down, the pack can be dropped easily. Backpacks will probably not be used in a class setting.
17. Keep loose clothing out of the brake system.
18. Stay away from beneath a rappel area. Rocks, people, or other items may fall.
19. Always carry a prusik so tension can be relieved (as in after a fall) or an obstruction cleared.
20. A person's descent can be slowed by putting pressure on the rope from below.
21. A team can belay and rappel at the same time with one rope, using 2 anchors and attaching the one rope to the 2 anchors. Adequate supervision is important when two students are belaying at once.

H. Options if the rope is too short. Be sure the rope is long enough before rappelling.
   1. Climb down the rock.
   2. Climb up the rock.
   3. Ascend the rappel rope, using 2 prusik slings or ascenders. Attach to each foot, or one to a foot and one to the seat harness.
   4. Attach an additional rope to the short rope and continue the rappel.

I. In teaching rappelling, always
   1. Use 2 slings--a chest harness and a seat harness
   2. Use a belay with a separate anchor
   3. Use 2 anchors (bombproof, of course)
   4. Tie, or at least check, all knots

XI. Enjoy

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Legal Liability: Implications for Outdoor Adventure Activities

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SUMMARY

I. Reasons leaders of outdoor adventure activities should be interested in legal liability.
   A. Moral reasons
   B. Practical reasons
      1. The current legal climate
      2. The "deep pocket" legal approach
II. A comparison of legal liability exposure in teaching outdoor adventure activities and other physical education and recreational activities
   A. Degree of risk--The precautions one must take increase as the risks in a particular activity increase.
   B. Skill of the participant--As the skill level of the participants increases, the standard of care required decreases.
III. Basic legal principles
   A. The right of people to live their lives free from damage by others
   B. The responsibility of a person who causes damage through his negligence to make whole the injured party to whom he had a duty
IV. A. Liability--legal obligation; responsibility
   B. Negligence--failure to act as a reasonable and prudent person would act under the circumstances; the dominant principle of tort law
   C. Tort--a wrongful act or omission leading to personal injury or property damage
   D. Plantiff--the person bringing the suit
   E. Defendant--the person against whom the action is brought
   F. Trespasser--one who enters without right or permission
   G. Licensee--a person who enters your property in pursuit of his/her own convenience, pleasure or business by bare permission
   H. Invitee--a person who enters the premises for your benefit or because the premises are held open to the public

I. Attractive nuisance--an object so enticing that it could reasonably be expected to attract the curiosity of one who lacks the intelligence, maturity, or experience to appreciate the danger it poses. This doctrine essentially elevates a child trespasser to the status of a licensee.

J. Forseeability--the expectation that one should reasonably foresee harm as a result of his/her conduct.

These definitions are for the purpose of our discussion and are necessarily brief and, therefore, somewhat incomplete. Other definitions will be introduced as they are used in the discussion.

V. The ingredients that must be present for a tort to have occurred
   A. There must be an injury, loss, or damage.
   B. The defendant must have had a duty to the plaintiff.
      1. The standard of care expected for:
         a. Trespasser--duty is to not willfully or intentionally injure.
         b. Licensee--responsibility is to refrain from intentionally harming the visitor and to warn of known latent defects.
         c. Invitee--responsibility is the same as to a licensee with the additional duty of a reasonable inspection to discover latent defects.
         d. Student--In loco parentis (in the place of a parent)--much greater standard of care is expected when the child is forced to be there or when he pays for services or care.
      2. The standard of care expected of:
         a. Ordinary citizen
         b. Professional person--The teacher or activity leader is an "expert," an educated and trained professional leader who is expected to possess the skills and knowledge expected of members of the profession. Much more is expected than of a reasonable and prudent average person or parent.
            (1) The need for thorough, often specialized, training
            (2) Certification
            (3) Be qualified!

C. The defendant must breach the duty owed to the plaintiff. He must fail to conform to the required standard of care owed the plaintiff. (Can negligence be established?)

D. There must be a casual connection between failure to provide adequate care (commission or omission) and the resulting injury (proximate cause).

VI. Some legal defenses

A. Assumption of risk--is currently a defense in bar to negligence only where the risk was expressly (orally or in writing) assumed.

1. The plaintiff must actually perceive, understand, and appreciate the risk. He must have knowledge of the particular risk and must appreciate its magnitude. The defendant cannot voluntarily assume a risk unless he understands and appreciates the risk. Courts have held that the very young are not capable of using good judgment; therefore, they must receive more protection and supervision.
2. The plaintiff must participate in the activity voluntarily and of his own free will.
3. Age, maturity, and intelligence are important considerations. Participants without sufficient age, maturity, or intelligence are capable of understanding the risks involved in activity and, therefore, are incapable of making meaningful decisions about the activity.
4. Ways to prove that the defendant understands and appreciates the risk.
   a. Teach properly
      (1) Teach what to do. Example: Do not tackle with the head down.
      (2) Teach what will happen if the person does not do what he is taught. Example: The neck may be broken.
      (3) Teach what the consequences of the results of not doing what he is taught will be. Example: The person may be an invalid for life.
   b. Prepare good lesson plans or teaching guides and follow them.
   c. Use handouts or a good textbook to cover all important aspects of dangerous activities. This is especially useful in case of student absence.

d. Use signed statements in which the student acknowledges that he:
(1) is aware of the danger
(2) understands the danger
(3) appreciates the danger

e. Ask the student(s) if they are aware of the danger, understand the danger, and appreciate the danger. Have them explain same to you.

5. In keeping with the above principles, the defendant assumes the risks inherent in the activity, but not the negligence of the leader.

B. Act of God (vis major)
1. Examples of acts of God
2. Limitations of this defense--foreseeability. Act of God is a defense only if the defendant should not have foreseen the danger.

C. Contributory Negligence
1. The principle that plaintiffs have a standard of care and a duty to protect themselves from injury. Was the plaintiff's conduct that of a reasonable, prudent person practicing ordinary care for his own safety under the same circumstances?
2. Limitations of this defense--the age, maturity, and intelligence of the plaintiff. The more capable, skilled, and experienced a person is, the greater the duty to protect himself.

VII. The place of insurance in legal liability
A. Liability insurance
B. Medical insurance

VIII. The value of obtaining a good attorney in the event of a lawsuit

IX. Miscellaneous points and tips
A. Choice of activities
B. Proper instruction
C. Proper supervision
D. Acquisitions and maintenance of adequate equipment
No participant assumes the risk of unsafe equipment
Poor quality equipment is a large liability risk
E. Acquisition and maintenance of adequate facilities
F. Adequate transportation
G. Adequate skill level
H. Adequate physical conditioning
I. Documentation
J. Stay current
K. Staff training

L. Procedures to follow when injuries occur
M. Length of time to keep accident reports
N. Rules and regulations for a particular activity can be a blessing or a curse. A teacher can be held liable for not establishing rules; and can be held liable for establishing rules and not following them.

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Outdoor Emergency Survival

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SUMMARY

The term "Survival" is often misunderstood, and this misunderstanding has influenced many people. It must be understood that a survival situation does not exist unless there is a direct threat to the life of the person or persons involved. This threat may be immediate, or it may be long range and cumulative. While most people think food is the primary need for surviving a wilderness emergency, it is usually the last thing that should be considered. The situation will vary, but there is a general rule, called the "Rule of Three," that can be applied. Humans can live about three minutes without air, about three days without water, and about three weeks without food. Each situation will vary, but this rule does put priorities in proper order when faced with a true survival situation.

If a person is not breathing or is bleeding severely, action must be taken immediately or they will die. In other cases, a life threatening situation usually allows more time to consider a course of action, such as being lost in a remote area. While it is impossible to predict appropriate action for every case, there are some broad principles that apply, and if followed, will greatly increase a person's chance of living through an emergency. These principles, "Imperatives of Survival," are listed in descending order of importance.

The most important single factor that affects people in a survival situation is their psychological state. Panic, confusion, fear and uncertainty probably are responsible for more deaths in the outdoors than the original life-threatening situation. The best survival kit that a person can have is a mind that is clear and that works well under stress. Without the ability to think logically and to avoid panic, the chances of surviving a real emergency are greatly diminished. How a person reacts to emergencies is unpredictable. A usually strong, confident individual may not respond as expected, just as a timid person may respond valiantly. The first imperative, therefore, is a Positive Mental Attitude, usually referred to as "PMA."

The second imperative is shelter. This means protection from the skin out, and includes clothing as well as structures. Protection from excessive sunshine, wind and rain will decrease the danger of heat-related problems, as well as those caused by cold and wet weather, most notably hypothermia. In cold weather, stuffing dry leaves or grass inside trousers and shirt will increase warmth. Barriers to rain may be fashioned from any sort of material that will stop water from penetrating to the skin. Several types of structures may be constructed that will shelter more than one person. In wooded country, structures such as a lean-to, A-frame or willow hut can be constructed from readily available materials. In deep snow country, snow caves can be dug rather easily, and with more work, igloos may be built, or snow piled up for making a snow cave.

Fire is the third imperative. It may take some ingenuity to start a fire if no matches are available. Fire can be started with flint and steel, a transparent object, such as eyeglasses, that will function as a lens to concentrate the rays of the sun, firearms or a bow drill.

Rest is the fourth imperative, and is doubly important since there may be no food available, and fatigue reduces mental function. In certain situations, it may be wise to change the pattern of sleeping times, such as staying up at night to keep a fire going, and sleeping in the daytime when it is warmer. While fatigue, discomfort and hunger may be unpleasant, in reasonable amounts they are not a severe threat.

Water is important and the need for it cannot be ignored for a prolonged time. If no natural water is available in streams, lakes or ponds, it may be difficult to find. Solar stills are of some value, but produce less water than might be expected. Water may be found in certain areas, such as dry stream beds or low lying areas where vegetation indicates there may be sub-surface water.

Signals used to attract attention may help with rescue. Any sort of signal that attracts attention may bring help, but the more effective ones are the standard ground-to-air signals formed by various methods such as tramping in the snow, using sticks to form the symbols or even using cloth or newspapers if they are available. The universal signal of distress in the outdoors is three of anything--whistle blasts, gunshots, fires.

Food may be found in many places, but is not nearly so important as many believe. Mountain streams will sometimes provide fish, berries and certain fruit may be available at times, and pursuing food can help avoid boredom even if no usable food is found. In general, most energy will be concentrated in fruits, berries, roots and tubers. Leafy plants will provide bulk, but often do not add substantially to caloric intake. Some plants that appear to be edible may be toxic. It's better to remain hungry than to eat something that is poisonous.

Survival kits, often advertised and sold to unsuspecting people, may give a false sense of security. Such kits are of a limited value and some are not worth taking along. The best way to survive a wilderness emergency is to avoid it! Effective planning, prudence and caution are the best ways to avoid those situations that threaten life in the outdoors.

ETHICS STATEMENT

When working with students in survival training, you should avoid the temptation to make the training realistic by actually constructing shelters and doing other activities that can cause serious environmental disturbance. In an actual situation, it may be necessary to do those things that will contribute to the survival of the individual, with environmental considerations secondary. However, when teaching keep impact at a minimum with no permanent damage, and make sure that students understand the difference between an actual and a contrived situation.

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SUMMARY

Both sessions begin with a presentation of the "ACCIDENT EQUATION," a powerful model indicating how to prevent accidents and injuries in outdoor programs. This model was developed through years of field experiences and provides a basic perceptual road map to safety management useful at every level of programming.

This is followed by a discussion and demonstration of the most practical and useful safety management technique, delivering an "ENVIRONMENTAL BRIEFING."

The focus will shift to an exploration of liability issues with emphasis on practical techniques to avoid legal confrontations and defensive techniques that can protect programs, including releases, waivers, and agreements to participate.

The longer session on Thursday will provide in-depth coverage of the liability issues and further exploration of topics of audience interest. The shorter session on Friday will deal only briefly with legal issues. Handouts will be provided at both sessions.

ETHICS STATEMENT

Safety in outdoor programs is provided only tangentially through proper equipment usage and protective devices. Much more important is the development of a consciousness of care, appreciation, and concern for the well-being of self and others. This same consciousness translates into a care and concern for the environment that it not be damaged, a sense of joy that environments provide physical, emotional and spiritual support and nourishment. Once the natural world is experienced at this level, positive values form regarding the environment and commitment is nurtured to protect, enhance, and preserve these resources.

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Thematic, Interdisciplinary, Experiential Education

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SUMMARY

I remember when I first began teaching at TCS 19 years ago. I was hired to teach in an innovative manner, with an emphasis on curriculum design and experimentation. Those words were haunting and I was unsure of the manner in which I personally could contribute. INNOVATIVE TEACHING (I thought I could do that, but I wondered if the school viewed innovation the same as I!) CURRICULUM DEVELOPMENT (Heavens, that's already packaged isn't it?) EXPERIMENTAL (You mean it's ok for kids to fail? Or for a teacher to try something not guaranteed to succeed?) It took me some time to be comfortable with my role and involvement with these ideas and expectations. It does say something about a tradition in our school that is and has been open for new and different ideas.

Thematic, Interdisciplinary, Experiential Education--what a mouthful! It seems inconceivable, but I've designed and developed a philosophy of teaching, of educating at TCS, that has equally unclear meanings. William Carlos Williams says it simply and eloquently, "What becomes of me has never seemed important, but the fates of ideas living against the grain in a nondescript world have always held me breathless." Thematic, Interdisciplinary, Experiential Education holds the fate of ideas living against the grain! This paper will attempt to define these meanings.

Schedule Format at TCS

1) Mon/Tues/Fri covers math, communication arts, social studies or science, art, music, and physical education.

2) Wed/Thurs are Theme Days.

3) Mon/Tues/Wed/Thurs/Fri math and communication arts are the first two hours of the day, the time is shortened on Theme Day.

I. Thematic

The THEME or THEMATIC approach is the umbrella under which subjects are pursued. It is a unifying topic.

Each class handles THEMES differently to best fit the developmental needs of kids and styles of different teachers.

Both pre-school classes are the most thematic classes. They intergrate a theme into their entire day, every day.

There are overlapping themes.

1/2 Day Pre: BABIES, FALL, MOTHER GOOSE

Full Pre: ARCHES, FALL, HALLOWEEN

K/1: ELECTION CHOICES
1 hour daily, 5 days a week
3 week duration, 3 teacher rotation

2/3: LITERATURE
3 afternoons a week, 5-6 weeks

4/5: STATE FAIR
2 days back-to-back for one quarter 10:30-3:00

MS: 6 WILDERNESS EXPERIENCE
7/8 FRESHWATER ECOLOGY
2 days back-to-back for one quarter 10:30-3:00

The back-to-back allows for overnights to occur without being so disruptive. The 10:30-3:00 time frame is conducive to field trips.

Documented Themes I Have Developed

1) ISLANDS
2) MINES AND MINING
3) A CAVE, A DAM, A RIVER
4) TRAINS AND RAILROADS
5) WESTWARD EXPANSION
6) FANTASY
7) FOXFIRE
8) CAVES AND CRYSTALLOGRAPHY
9) WILDERNESS EXPERIENCE
10) URBAN EXPERIENCE

II. Interdisciplinary

The specific subjects--science, geography, literature, poetry, writing, art, music, physical education--that are taught within the Theme are the combining of disciplines, or interdisciplinary learning. Most themes have a science or social studies core.

For us, subject matter has always overlapped in education. One year when I incubated and hatched quail eggs, the second graders read and looked at pictures of an egg with a chick inside. Was that science or language? As they drew pictures and wrote up a description of the chick inside the egg, and measured the size of the egg, was that art or language, or science, or math? Who cares? The second graders were involved in a unified, holistic approach to learning that was interdisciplinary.

Interdisciplinary learning might be interpreted as learning that crosses over into two or more academic disciplines. What could possibly be more natural than to incorporate several different disciplines under the same experience? After all, very few of us live our life departmentally. Life is interdisciplinary.

Labeling Interdisciplinary Courses

We have discovered that unless a class is "labeled," many students are not sure of the subject.

Take for instance, the Theme, "A Cave, A Dam, A River." We researched the issues surrounding the building of a dam on the Meramec River. We studied the positions, both pro and con, of various prominent and political figures and invited them to speak to our class. We read newspaper articles and polled people in Sullivan and in Webster Groves. We also made an environmental consideration game surrounding the building of the dam. (That's social studies.) We went to a cave and became knowledgeable about these underground wilderness areas, some of which would be inundated with the construction of a dam. We went to see an earthen dam structure in Caryle. We determined the rate of flow, the length of the river, the amount of flood plains, and other stream ecology activities. (That's science!) We estimated, measured, used metric and standard lengths. (Math) We wrote business letters and thank you notes; wrote our personal position statement; interviewed people and wrote articles; wrote poetry and prose on caves, dams, rivers; read articles and newspapers. (Language Arts)

When I was a student I knew I was in English or science because the course was titled "English" and "Science." These same disciplines are present in interdisciplinary education, they are just integrated into the Theme.

Decision Making: Determining What Disciplines Go With What Theme

Two issues in planning a theme are as follows:

1) discipline coverages and sequencing
2) individualization

Concepts and processes within each discipline are reviewed by the teachers to decide what would best fit into the different themes. Take, for instance, a view of writing in the upper grades. Teachers want students to write journals, scripts, reports, research papers, and poetry through themes. The Wilderness Experience highlights journal writing. Theatrical/ Musical productions stress script writing. Fantasy captures the elements for story writing. Westward Expansion incorporates a research paper complete with bibliography and written in the first person. Fantasy provides the framework for fact or fiction reports. Caves as well as Trains and Railroads capitalizes on poetry and poetry forms. Additional attention is given to looking at science, social studies, reading to determine what pieces naturally fit or work into each theme.

Thematic: Topic or subject matter. Interdisciplinary: disciplines taught.

III. Experiential

Experiences set the stage for much learning. I teach a class for teachers that is a one week class of adventure experiences. One teacher wrote "I never learned so much without opening a book. Now I'm ready to return to the books and find out 'why' to the questions I have floating in my head." To make students curious enough to want to learn, to want to become self learners, is what we in education should be about!

Experiential is doing REAL activities--not simulated, not reading about, but REAL experiences.

Hiking with a backpack that carries your home for the week is REAL.

Using a map and compass to locate your rock shelter bluff for that night's shelter is REAL.

Interviewing and polling people on an issue is REAL,

Developing and printing film is REAL.

Digging up a skeleton, washing, bleaching, drilling, wiring bones back together is REAL.

Writing and producing your own play is REAL.

Making choices for an election theme--be those choices the color of your drink or the choice of playground equipment is REAL for K/1. On a more sophisticated 7th and 8th grade scale, helping in a campaign office or setting up a registration process for the school's mock election is REAL.

Peeling apples, building an apple butter stirrer, making apple butter is REAL.

Writing an article for publication and mailing it to a printer is REAL.

Learning about early settlers and preparing your own dinner from a live source is REAL.

Climbing and rappelling is REAL.

Studying the lifestyles of a mountain man and building a matchless fire is REAL.

Real experiences provide internal knowledge. A student can read about and expand his/her understanding of an experience after he/she has personally experienced it.

"The Summit," a poem by Nancy DuVall, addresses the importance of experiential learning.

You cannot stay on the summit forever
You have to come down again.
So why bother in the first place?
First this;
What is above knows what is below
But what is below does not know what is above.
One climbs, one sees, one descends,
One sees no longer, but one has seen.
There is an art of conducting oneself in lower regions
by what one saw higher up.
When one can no longer see, one can at least know!

<u>Benefits of Thematic, Interdisciplinary, Experiential Education</u>

1) Quality of work. The more powerful and intense the experience, the more involved the student, the greater the expressive quality. Non-writers won't become fluid and prolific, but in relation to past work, expression will be of higher quality.

2) Discovery of self as a resource. One girl, after visiting eight caves and locating bats in five of them, was doing a report on bats. She was listing her resources and asked, "Mrs. Phillips, could one resource be my mind?" The use of self and others as a resource is an important discovery.

3) Leadership and friendship opportunities. Campouts provide unique opportunities to establish relationships and see children in a new setting. It also allows for emerging leaderships to be highlighted.

4) Allowances for different levels of abilities/ involvement/interest. Individualization is a bonus that occurs within each theme with accountability for ability span and for different modes of learning (sensory, visually, auditorially, kinetically). Most schools attend to the left brain (the cognitive, information side). TCS stresses the right side as well (affective domain, aesthetic, sensory, kinetic areas).

Renzulli, well known in gifted education, suggests a type of program for the top 5%. His revolving door policy for gifted learners can include students within the top 25%. As such a select few children are labeled gifted and given special curriculum. TIE views problem solving, group decision making, cooperative efforts (creative, thinking situations) as an intrical part of our program for every child in TCS. It aims to bring out the <u>giftedness</u> of <u>every</u> child.

At a recent Staff Development Day, one of the speakers, whose subject matter was one of experiential learning, was discussing the constant concern of students to view everything done in light of "Will it be on the test?" If it wasn't on the test, there was no purpose to learn it. His response was "Yes, it's on the test of life!" These qualities are also strengths of Thematic, Interdisciplinary, Experiential Education--preparation for life skills--decision making, group efforts, creative approaches, positive experiences.

Thematic education is all-encompassing and relevant. Both curriculum and student learning is taken into consideration. Themes provide a specific focus with subject overlaps for children to experience learning in a holistic, integrated manner. The result is an education which reinforces learning in a way which is alive, relevant, and long lasting.

"One climbs, one sees, one descends.
One sees no longer, but one has seen."
Or a Chinese proverb says,
I hear and I forget.
I see and I remember.
I do and I know!"

Thematic, Integrated, Experiential Education: Ideas that live against the grain!

I KNOW!

ETHICS STATEMENT

The importance of acting responsibly in all outdoor activities is strongly stressed in all phases of the Thematic, Integrated, Experiential approach to education.

All users of the out-of-doors need to develop an appreciation or a philosophy of the environment, an understanding or knowledge that the outdoors relates to all other aspects of living. The interrelationships of plants and wildlife affect the web of life, the ecological system, the entire environment.

Many urban children are not out-of-doors oriented. Thematic, Integrated, Experiential Education offers an opportunity to teach the role that nature plays in the total picture of our incredible natural, out-of-doors resources. Every theme has some aspect of learning or teaching the values of air, water, or soil and the effect the quality of these resources has on all living creatures.

One aspect of the "Experiential" component is a campout appropriate to the theme. Every campout affords an opportunity to address our responsibility to the environment. By managing the land respectfully, keeping it in a natural state, and leaving sites cleaner than found, we insure a resource for future generations to enjoy. At the same time we instill a mental attitude in today's generation of users.

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Who's in Charge?—Maintaining Leadership

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SUMMARY

With the advent of outdoor education programs at all levels and for all people, there has emerged a core of skilled professionals. These teachers and leaders have personal technical skills in many areas and most of the time can provide meaningful skill experiences for their clientele. Some teachers and leaders believe in the value of "processing" experiences. What this means is to talk about the feelings and emotional responses evoked from a particular experience. This is good and provides an outlet for the participant who has just had a significant experience!

When a group is together for more than a few days a variety of dynamics begin. There is little training for the outdoor educator that addresses these dynamics and yet how well a leader handles the situations can determine the level of satisfaction, enjoyment and even safety of the trip. Larry Buell in his published dissertation, Outdoor Adventure Leadership Competencies for Entry Level and Experienced Level Personnel (1981) notes the difference between the role of a leader and the role of an instructor. The leader is concerned with the goals and objectives of the group and the needs and interests of each individual within the group. The instructor is activity oriented.

It has been documented many times that failure of group goals in the mountains is the result of a breakdown in the group and lack of leadership in this area. An outdoor leader wears many hats and one of the most important may be that of facilitator of group dynamics. Much of the literature in this area comes from the fields of Applied Social Psychology and Organizational Development.

The functions of the leader in regard to group development varies depending on his/her competence, theoretical orientation, the nature of the group and the leader's perceptions of the demands of each situation. There are many components of group development. As group dynamics emerge they encompass morale, tone, atmosphere, influence, participation, leadership struggles, conflict, competition and cooperation. There are some areas that comprise the dynamics of the group. They are communication, decision-making procedures, task-maintenance behavior and emotional issues. This article will address the task-maintenance behaviors involved in a group.

Behavior in the group can be looked at from the point of view of what the purpose or function seems to be. When a member says something, is he primarily trying to get the group task accomplished (task) or is he trying to improve or patch up some relationship among members (maintenance) or is he primarily meeting some personal need or goal without regard to the group's problems (self oriented)?

A group has two things in common with a machine:

1. It has something to do.
2. It must be kept in running order to do it.

These twin functions require continual attention. Groups show their concern for the first (their specific jobs, goals, activities) by establishing procedures, rules of order and expected leadership responsibilities. Sometimes the rules a group sets up for itself fail to take into account maintenance needs. When this happens the group begins to bog down.

The importance of maintenance functions is immediately recognized in other situations. Airlines require the services of maintenance crews as well as navigators. An automobile, sewing machine or typewriter that has no care paid to its upkeep soon begins to break down. We cannot carry this analogy too far. One of the important ways in which a group differs from machines is--a new machine has its peak of efficiency at the beginning of its life. A new group, on the other hand, is likely to be more inept and less efficient at the beginning than it is later. If it is healthy, a group grows and changes, becomes more cohesive, more productive and more capable of helping its members. The problem of maintenance is inseparable from growth.

As the group grows and members needs become integrated with group goals, there will be less self-oriented behavior and more task or maintenance behavior.

<u>Types of Behavior Relevant To TASK:</u>

1. Initiating--proposing tasks or goals; defining a group problem; suggesting a procedure for solving a problem.
2. Seeking Opinions or Information--Requesting facts; asking for expression of feeling; seeking suggestions or ideas.
3. Giving Information or Opinion--Offering facts; stating a belief about a matter before the group; giving suggestions or ideas.
4. Clarifying and Elaborating--Interpreting ideas or suggestions; clearing up confusions; defining terms; indicating alternatives.

5. Summarizing--Pulling together related ideas; offering a decision or conclusion for the group to accept or reject.
6. Concensus Testing--Asking to see if a group is nearing a decision; sending up a trial balloon to test possible conclusion.

Types of Behavior Relevant to a Group Remaining in Good Working Order and Good Relationships Which Permit Maximum Use of Member Resources--MAINTENANCE:

1. Harmonizing--attempting to reconcile disagreements, reducing tension.
2. Gate Keeping--Helping to keep communication channels open, facilitating the participation of others, suggesting procedures that permit sharing remarks.
3. Encouraging--Being friendly, warm and responsive to others; facial expressions or remarks about the acceptance of others' contributions.
4. Compromising--Admitting error; modifying in the interest of group cohesion; win-win situation for all.
5. Standard Setting and Testing--Testing whether group is satisfied with its procedures; pointing out implicit and explicit norms.

Every group needs both kinds of behavior and needs to work out an adequate balance of task and maintenance activities. This is similar to content and process aspects of group development. Task, like content, is the WHAT. Maintenance, like process, is the HOW.

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II. OUTDOOR EDUCATION ACTIVITIES

A Circle of Campfire Fun

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SUMMARY

Singing around the campfire
Chants and rhythmic activities around the campfire
Stories and readings around the campfire
(Handouts will be distributed to the participants)

ETHICS STATEMENT

Outdoor Education and Music Education have in common the unique ability of teaching sensitivity, awareness and overall aesthetic appreciation to adults and students. Music is an enriching addition to the Outdoor Education program and it can be highly influential in teaching positive conservation practices.

ACTIVITIES

Night hike before closing campfire
Twig dedication ceremony campfire

RESOURCES/REFERENCES

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WEE SING
WEE SING AND PLAY
WEE SING SILLY SONGS
WE SING AROUND THE CAMPFIRE

Fine, Dixie Calvert, Missouri Conservation Melodies, Missouri Department of Conservation, Jefferson City, Missouri, 1983.

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FAVORITE QUOTES

"The woods would be very silent if no birds sang there except those that sing the best."

Henry David Thoreau

Aquatic Education

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SUMMARY

More than 60 million Americans go fishing each year, making this sport one of the most popular outdoor activities. Therefore, it is vital that we educate our youth to the wise and responsible use of this aquatic resource.

Guidelines were recently written for National Aquatic Education Programs funded by the new 1984 Wallop-Breaux bill. In keeping with these guidelines, Missouri Department of Conservation personnel have developed aquatic education instructor and student materials, piloted aquatic education programs in elementary and secondary schools, established comprehensive urban fishing education clinics for handicapped and disadvantaged citizens, and taught casting and angling instructor courses for graduate and in-service credits.

These materials and programs will be reviewed. Slides and handouts will help give program participants a comprehensive feeling for the curriculum involved in each of these programs and describe how to establish their own programs. Materials will be presented showing how casting and angling can be directly related to each subject area in the school curriculum. A Kids fishing Learning Center will be examined. Special consideration for teaching casting and angling to handicapped and senior citizens will be discussed.

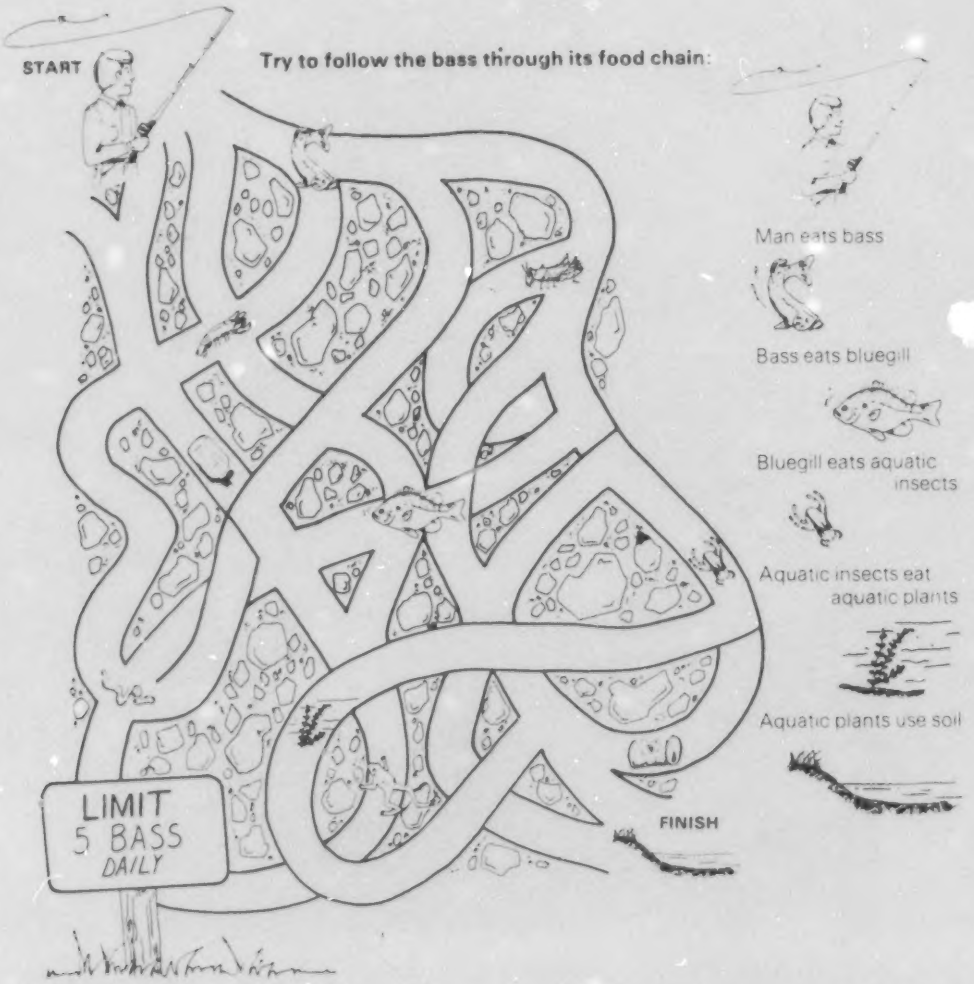
Finally, a "hands-on" mini-fishing clinic will be held. Participants will discuss outdoor ethics, conservation concepts and fishing methods, learn basic spin-casting techniques, filet fish and try several recipes for cooking Missouri fish.

The following goals have been written for National Aquatic Education Programs:

1. To promote an understanding of water quality and public responsibility toward aquatic resources;
2. To cultivate a code of ethics and responsibility among aquatic resource users;
3. To enhance the public's understanding of fishery management, including regulations, and aquatic lifeform identification;
4. To provide the learner with a basic understanding of aquatic lifeform environmental needs and the intricate balance of this need to the use of the resource;
5. To reduce fishing related accidents and promote aquatic safety;
6. To improve the student's skills in the use of fishing equipment to produce more responsible aquatic resource users.

ACTIVITY

This activity for fourth, fifth or sixth graders relates fishing to science curriculum (food chain discussions) and to social studies curriculum (ethics and citizenship discussions). This is one page from Kids Fishing, It's Catching On, a student fishing activity book published by the Missouri Department of Conservation.



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ETHICS STATEMENT

Conservation has been defined as "wise use without waste." This means teaching youth to use our fisheries resource in such a way that it will always be available for use. The essential concepts and skills for properly conserving our resources must be taught. Joseph D. Bates, Jr., author and fisherman, believes "fishing is the key which unlocks the beckoning door to the beauty, wonder, and solace offered by the great outdoors." The many pleasures of "just fishing" and needs for fishing education can never be measured.

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(For individual state guidelines on aquatic education programs, write to your state fish and game department).

Canoe Trip Planning

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SUMMARY

There is a glowing, lifelong romance between the canoe and the wilderness. Since the day of the voyageur we have been exploring lakes and rivers throughout the continent by canoe.

Preparation for a wilderness canoe trip can be almost as enjoyable as the actual tripping. The hours of discussion and planning add to the excitement of the trip. "What do we need? How much do we need? Will it all fit in the packs!?" These are questions we have all asked before setting out on a new canoeing adventure. The following presentation should answer many pre-trip questions and help make each voyage a successful and safe journey.

Wilderness Canoe Tripping

I. INTRODUCTION
   Why Canoe Tripping
II. WHO
   A. The Paddlers
      1. Tandem
      2. Group
      3. Solo
   B. The Leader
III. WHEN
   A. Seasons
      1. Summer
      2. Fall
      3. Winter/Spring
   B. Special Prep
IV. WHAT
   A. Flatwater Cruising
   B. White Water Adventure
V. WHERE
   A. Trip Planning
      1. Trip length
      2. Location
      3. Skills required
      4. Getting there
   B. Maps

VI. HOW
- A. Canoes
- B. Paddles
- C. Camp Equipment and Supplies
  1. Tents
  2. Sleeping systems
  3. Packs
  4. Cooking
  5. Food
  6. General gear
  7. Clothing
  8. Personal items
- D. Safety
  1. On the water
  2. In the camp
  3. On the portage
  4. On the road
- E. Trip Activities
  1. Fishing
  2. Exploring
  3. Photography
  4. Organized programs

VII. Canoeing Ethics

ETHICS STATEMENT

Few areas in the past decade have witnessed such an increase in use as our canoeing environment. The popularity of these areas is due partially to the great amount of publicity and promotion by commercial recreation programs. Use of these areas range from the weekend "canoe and brew" bunch to the amateur "adventure seekers" lusting for the thrill of the wilderness and whitewater.

Many canoe areas are of a very fragile nature. Both day paddlers and those of extended outings have a tremendous responsibility in maintaining the balance between themselves and the canoeing ecosystem.

As long as there is water to canoe, there will be a canoeist. By teaching canoeing skills and wilderness ethics, we help to preserve this wilderness heritage for paddlers of the future.

ACTIVITIES

"Dry Land Paddling"

An age-old reason for not teaching canoe skills has been the excuse, "We don't have water to practice on." Granted, there is nothing like being on the water to experience the feel of the canoe and paddle. But, all of the portaging, launching, loading, entry-exit, safety and paddling skills can be taught on dry land. Students will then make their first water voyage with a feeling of confidence and display above average skill levels.

A typical session might include:

1. The class area is arranged so students can sit approximately the same distance apart to simulate being in a canoe. Folding chairs work very well but milk cartons, logs or any type of seat that will keep them elevated a foot or two off the ground also will work.
2. Students are then outfitted with paddles as close as possible to the correct length. (Mock paddles may be made and used if necessary.)
3. Students are then paired and asked to choose their "canoe." If there is an odd number, place two bow paddlers in one canoe and have them do the same strokes.
4. The instructor should start in front of the group and demonstrate the basic techniques and allow the paddlers to practice each. As soon as the group can do each technique, it is time to talk about the effect each will have on the canoe.
5. Now it is time for a dry land canoe trip. The instructor can create and call out different situations from the dock while moving from canoe to canoe correcting mistakes. Special situations can be discussed as needed.

This session can be very informative and a lot of fun for all. Be creative!

RESOURCES/REFERENCES

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Canoer's Bible by Mead, Doubleday & Co., Garden City, NY, 1976.

The Complete Wilderness Paddler by Davidson and Rugge, Knoph Inc., 1975.

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FAVORITE QUOTES

"For there is no life so happy, as the life of the voyageur."

Grace Leenote from The Voyageur

"A man is part of his canoe and therefore part of all it knows."

"When a man is part of his canoe, he is part of all that canoes have ever known."

"The way of a canoe is the way of the wilderness..."

Sigred Olson

"There's a whisper on the night wind,
There's a star agleam to guide us.

And the wild is calling, calling...
Let us go."

Robert Service

Caving as a Tool in Outdoor Education

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SUMMARY

Caves are a unique, beautiful and fragile resource and, for many years, have escaped the attention of most people. More and more, however, people are becoming curious about caves. As a result, caves today receive heavier use--from scientists wanting to study them, cavers wanting to map them and others just wanting to explore them. Therefore, an understanding and knowledge of this deceptively fragile resource is fundamental to preserving it.

Caves can develop under a variety of conditions and in a variety of rocks and other media; however, most develop in regions characterized by limestone or dolomite with ample water and verticle relief. The water usually dissolves the limestone along structurally weak areas in the formation, such as bedding planes, joints or faults. Most of the solution of the cave occurs below the water table, as saturated rock acts as a conduit for slow moving groundwater. This water eventually resurfaces as springs. During this phase in the early development of a cave, the genesis of the cave does not resemble the development of a surface river valley, as is commonly believed. The water is not swift, it does not cut the rock formation by erosion, and a drainage basin pattern is absent. The process is slow sometimes requiring millions of years. Eventually, erosion on the surface intersects a cave and drains it. From this point, clay fills the cave and is later removed, at least in part: Secondary minerals are deposited and are frequently referred to as formations. Organisms from the outside join those already occupying the cave. The water that passes through the cave now is drained from the surface and does enlarge the cave by eroding the rock. Ultimately, the system collapses due to erosion of the surface above the cave and it becomes a valley. The entire process requires immense amounts of time. Any damage done by man lasts for lifetimes.

Organisms found deep within a cave are far different from those on the surface and very exciting to see. Their style of life and benefit to man are little understood or appreciated by most people. The entire source of food for a cave community is decomposing materials brought in from the outside world. Organisms, such as bats, supply fecal material that provides the food base for many caves. Other sources include dead plant and animal material brought in from the surface by drainage water and organisms that happen into the cave and die. The amount of food available to a cave community is limited; therefore, the food web is small and not very complex. Organisms that live in caves are specialized and exercise great care not to waste energy. Food that is brought into the cave is first broken down by fungi. The fungi, in turn, support a variety of small arthropods, many insects. The top of the food web is frequently salamanders. Surface species that often visit caves bringing with them materials to establish the food base are referred to as trogloxenes. They include crickets, frogs and bats, to name a few. They are the most numerous of the cave inhabitants and are found near the entrance.

Organisms, which live perpetually in a cave but are not distinguishable from relatives on the surface, are referred to as troglophils. This group includes some species of salamanders and crickets. They are usually found deeper in the cave.

The group of organisms which are specialized for cave life, and live exclusively in the deeper areas of the cave, are called troglobites. They are colorless, blind and move very slowly to conserve energy. Their slow movement makes them vulnerable to being injured by people. They have well developed receptors for sound and vibrations. They also have a keen sense of smell. Members include the grotto salamander, cave crayfish, cave fish and isopods.

ETHICS STATEMENT

It is important for people to realize that food in a cave is scarce; therefore, the food web is simple and contains few members. It is extremely vulnerable to destruction by groundwater contamination or by the activities of cavers. Dumping spent carbide in a cave, carelessly walking through breeding pools on the cave floor, or driving the bats from a cave by frequent disturbance can destroy the cave community.

Caves offer great benefits to people. They help to break down the waste materials of the surface community, acting as a natural cleaner for our world. They provide a model of a simple ecosystem that allows us to measure the impact of human activities on the system.

In addition, organisms such as bats are of great economic value. To give just one example: 500,000 gray bats that inhabit Missouri in the summer eat 400 tons of insects in a year. Many of these insects are agricultural pests. First, consider how many mosquitoes and beetles it would take to make 400 tons. Second, consider how many hundreds of gallons of pesticides we would need to accomplish the same job if it were not for the gray bat. What would be the added health risk of using these additional pesticides? Praise be to bats, and this is but one example. Unfortunately, 80 percent of the gray bat population has vanished within the last 20 years or so. They have vanished because of disturbances by people when visiting caves and by poisoning, both direct and indirect. It is important to realize the value of the cave community and fight to protect it.

The educational value of caves is large, but not without limits. Caves are excellent for teaching mapping, compass reading, photography, geology, hydrology and biology. They also offer the excitement of new discovery and the chance to teach leadership and teamwork. They are ill-suited, however, for stress challenge experiences for poorly disciplined students. The damage incurred by the cave and its live community is simply too great. With this one exception, caves are a beautiful environment for getting students excited about learning.

Basic equipment for an individual is a hard hat, three independent light sources, shoes other than tennis shoes, and a change of clothes. Group equipment should include a 30-foot section of rope, plastic bags for hypothermia treatment, high energy food and a first aid kit.

A group leader always needs to think safety first. It is your responsibility to protect the group from harm. Make sure the cave you choose for a field trip is not above your skill level. Visit the cave in advance of the students. Consider the size of the group and the experience level. Groups of four to eight are ideal. Safety can often be assessed by being familiar with the cave, its elevation above local water levels and the weather forecast. A good rule to follow is to leave a note at home stating where you went, who went with you and when you will return. Be generous with your return time. Provide a rescue number to call if necessary. Local caving clubs called grottos or the state police are good choices. Consider also the sensitivity level of the cave when deciding the impact your group will have on its community. Now you are ready to go!

Remember, thousands of people go caving and few encounter difficulty. A little common sense will assure you of a pleasant trip.

Good caving, enjoy and learn!

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The Speleoshoppe
Ian Ellis
P.O. Box 297
Fairdale, Kentucky 40118
502/367-6292

FAVORITE QUOTES

"Let us not think of our natural resources as being inherited from our fathers, but as borrowed from our children."

Anonymous

"Let us take nothing but pictures and leave nothing."

Anonymous

Curriculum Development for Conservation

Jeanne Marolf
Outdoor Skills Education Specialist
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Kansas City, MO 64116

SUMMARY

This course is designed for school administrators, teachers, and youth leaders. Participants will review the overall process for developing meaningful conservation curricula from any materials using Benjamin S. Bloom's six levels of thinking and learning in the cognitive domain.

When bloom's learning taxonomy is used in designing and constucting conservation instructional materials, it allows the teacher to stimulate the mind vertically while motivating the student to apply, organize, create and evaluate his learnings. It allows learning to be an open street for a student, not a closed street for only factual information. It is essential for conservation curriculum.

Participants will receive a Thinking and Learning Activities Guide that will outline this method for developing educationally sound conservation lesson plans, task sheets, activity books, or games. They will learn how easily this process provides the educational structure for any type of instructional unit, any subject, any instructional setting, and all ability levels.

All participants will be involved in art and cooking activities. They will learn how these common activities can teach basic conservation concepts and help students evaluate their impact on natural resources.

Thoreau once said, "It's not what you look at, it's what you see that's important." This course will teach educators how to increase students' awareness of relevant conservation issues in order to bring about a change in attitude and behavior toward the use of natural resources so these will always be available for use.

ACTIVITY

A Conservation Art & Craft Task Sheet

Objectives

Upon completion of these activities and when asked to respond either orally or in writing, students will:

1. Recall what plant or fish structures were used to make their project.
2. Diagram a simple food chain that includes one or more of the plant structures or fish used to make their project.
3. Predict what might happen to the environment if man caused these identified plants or animals to disappear forever.
4. List commercial products manufactured from the plant or fish used in construction of the project.
5. Describe how man could destroy the species used for the design.
6. Suggest ways which might ensure the continued existence of all types of plants or animals.

Project

Fish or Leaf Print

Materials Needed:

1. Fish or plants and plant parts such as maple leaves, ferns, or grasses are ideal for painting.
2. Acrylic paint in tubes. This paint is water soluble until dried. Printed items can be washed and dried as usual.
3. Paint brush assortment--1/2 or 1 inch.
4. Newspapers, containers to mix paint, paper towels and water for washing brushes.
5. T-shirts, cotton fabric cut as neckerchiefs, etc. for receiving the print.

Instructions:

1. On a flat surface spread a layer of newspaper. If using T-shirts, insert a layer of newspaper so paint won't bleed through.
2. Use paint colors as they are from the tube.
3. Using a clean sheet of newspaper, place plant or fish with side to be printed up. Paint directly on plant or fish until covered with color.
4. Place fabric over painted plant or fish. Press with hands making sure that all the painted surface has been pushed onto the fabric.
5. Remove plant or fish, wipe off with paper towel. Plant or fish is ready to be used again.

Relating the Project to Conservation

1. Circle those items found below that were used to make your project.

roots	stems	fish	leaves	
flowers	fins	seeds	bark	scales

2. Draw a simple food chain linking man to the fish or identified plant structure used in the previous activity.
3. Read the following information about acid rain.

Acid rain is a serious environmental problem; it is the step-child of pollution. The problem begins with the burning of fossil fuels: petroleum and coal. Millions of tons of sulfur dioxide are produced from coal burning plants, and millions of tons of nitrogen oxides are emitted in the exhaust of gasoline powered vehicles. These pollutants combine with water vapor in the air and gradually turn to sulfuric and nitric acid. Blown by the winds, much of the acid comes down thousands of miles from its source. This acid returns to earth in the form of rain, snow, hail and fog.

Briefly stated, a chemical solution is more acid when it contains more charged hydrogen atoms. Acidity is measured on a pH scale that ranges from 0 to 14; 0 is extremely acidic, 14 is extremely alkaline or basic, and 7 is neutral. Acid-base relationships are another example of the balance of nature.

Current research is producing strong evidence that too much acid rain can reduce soil fertility, damage leaves of trees and vegetables, induce heavy metals into food chains, kill fish and other aquatic organisms, release toxic metals into the drinking water supplies and damage building materials.

4. How do you help produce acid rain?
5. Give reasons for and against a strong Clean Air Act at the federal level.
6. Predict what could happen to the cost of fruits, vegetables and lumber if acid rain continues to increase.
7. Predict the economic impact on the recreational industry of the northeast if acid rain continues to increase.
8. Some plant and animal species are becoming extremely rare. Describe ways to protect these species so that we will always have them to use and enjoy.

RESOURCES/REFERENCES

Decker, E., and Huck, Albert, Environmental Respect, Safari Club International Conservation Fund, Tucson, Arizona, 1976.

Ford, Phyllis M., Principles and Practices of Outdoor/Environmental Education, John Wiley and Sons, New York 1981.

Marolf, J., Pyland, J., Thinking and Learning Activities Guide for Conservation Curriculum, Missouri Department of Conservation, Outdoor Skills Education, Jefferson City, Missouri.

Marolf, J., Hagerty, M., Pyland, J., Kids Fishing, It's Catching On, Missouri Department of Conservation, Jefferson City, Missouri 1984.

Martin, Wayne L., S.P.O.R.T. Ethics Class, Missouri Department of Conservation, Jefferson City, Missouri, 1980.

Phillips, Jan, Campground Cookery, Missouri Department of Conservation, Jefferson City, Missouri, 1983.

Pyland, J., Hagerty, M., Marolf, J., Conservation is Caring, Missouri Department of Conservation, Jefferson City, Missouri 1983.

Jerky Making and Smoker Construction

John S. Adams
Regional Staff Specialist
Missouri Department of Conservation
P.O. Box 180
Jefferson City, MO 65102

SUMMARY

Jerky! The staff of life for the Indian, fur trader and early pioneer alike. Preservation of food was necessary for traveling on the frontier and to be able to survive the harsh winters when other foods were unavailable. Dried meats were light in weight, easy to prepare, nourishing and could be made in abundance when the fall hunting days came.

We are able to do these same skills today for our enjoyment and good eating on hikes, campouts or at home. All you need is meat and a source of heat to dry it. With a few spices and certain types of wood for smoke, the taste of jerky is excellent.

Several types of smokers and the materials needed to build them will be covered and everyone will participate in their construction.

The preparation of the meats for smoking will be a hands-on experience for all attending the session. All equipment needed will be furnished by the instructor.

Of course the best part of the program will be sampling the jerky as it comes from the smoker.

RESOURCES/REFERENCES

Wild Game Cookbook, Remington Sportsmen's Library Book. Edited by L.W. "Bill" Johnson. A Benjamin Co./Rutledge Book. N.Y.

Home Preserving Made Easy by Vera Gewantert and Dorothy Parker. Viking Press, N.Y.

Map and Compass

Gail S. Ludwig
Associate Professor
Department of Geography
6 Stewart Hall
University of Missouri--Columbia
Columbia, MO 65211

SUMMARY

This session focuses on using a variety of outdoor environmental education activities to teach basic map and compass skills. All the activities require the students to be active participants in the lesson. The activities require only basic equipment and can be easily adapted to any school site or outdoor area.

Understanding maps and compasses and having the ability to use them are valuable skills. Maps can be used to obtain an overview of an area prior to visiting the site. They also can be a useful tool for recording environmental data about the area. Maps are helpful in describing the environment and useful in class projects involving observation and discovery. Much can be accomplished in the traditional classroom toward developing a student's understanding of maps and measurement, but real comprehension of mapping really cannot be learned without first-hand experience with measurement skills and map construction.

The activities used in this session focus on the use of environmental resources beyond the classroom. The rationale for this approach is based on the concept that the students can become more than spectators by active participation and involvement with the lesson. The activities have been constructed to provide a logical progression of ideas which the teacher can easily follow. As necessary, worksheets, diagrams and drawings are provided to enable the teachers to understand and use the activity in their respective classes.

A basic premise to be followed when using any activity is that it must be modified to fit the expertise of the teacher, the level of the students, and the site where the activity is to take place. These modifications will be discussed and several options given and tested to reinforce this point.

ETHICS STATEMENT

When using a map and compass, you should be considerate of the landscape and people. Always obtain permission before undertaking map and compass activities on private property. Respect landowners by leaving gates in whatever condition you found them. (Open, if found open; closed, if found closed.

Avoid climbing fences whenever possible. If fence climbing cannot be avoided, take extreme care to avoid damaging fences. When following a compass course through woods or brushy terrain, don't break branches to clear a path. Also, when laying out Orienteering courses, avoid nailing markers into living trees. Markers attached to wooden stakes and set in the ground work best for most uses. Remove all markers at the end of the activity.

You should also be considerate of wildlife and be careful not to disturb their nesting sites. Spring and early summer are when most animals bear and rear their young. If you are going to use an area during this time of year, scout it carefully, then route groups around nesting areas.

By following these simple rules and using your own common sense, you can thoroughly enjoy the excitement of map and compass activities. You also ensure that those who come after you will enjoy themselves as you did.

ACTIVITIES

Pacing--This activity teaches students a method of measuring the length of their pace. Upon calculating this, each student will be familiar with estimating distance between objects and can apply this methodology to map distance.

Determining Lengths, Widths and Areas--The students utilize the concept of pacing to determine dimensions of specific objects or locations. Knowing how to determine areas of a site or an object is a valuable skill for map reading.

Walking A Straight Line Blindfolded--This activity shows students that it is often impossible to walk a straight line without a compass if their vision is impaired (i.e. fog, dense vegetation). The activity is designed as an introduction to compass use.

Object Location--This is a basic activity using an Orienteering compass. It tests the students' ability to use compass bearings to determine specific locations of objects.

Bearing Test--Being able to plot bearings using a compass is a valuable skill. This activity is a simple method of teaching students to read a compass.

Three Cornered Walk--The students combine the concept of pacing with compass bearings to complete a three cornered walk. By adding 120° to an original compass reading and walking a prescribed distance three times, the student should be back to the starting point.

Contour Map Relay--This activity teaches students how to visually analyze locations on a map. They then plot these locations on another map using time and speed as incentives for learning.

Modified Orienteering Meet--This is a shortened version of an Orienteering meet using the local site (school grounds, park, campsite, etc.) as the meet location. The activity is adaptable to most any site and does not require elaborate preparations or equipment for implementation.

RESOURCES/REFERENCES

Map and Compass: Outdoor Living Skills Series by Gail S. Ludwig, 1983, Missouri Department of Conservation, 90 pages.

Be Expert with Map and Compass: The Orienteering Handbook by Bjorn Kjellstrom, Charles Scribner's Sons, 1976, 214 pages.

Mapping Small Places by D.F. Wentworth, J.K. Couchman, J.C. MacBean and A. Stecher, Holt Reinehart and Winston of Canada, 1972, 106 pages.

The Environmental Classroom, by Donald Hawkins and Dennis Vinton, Prentic-Hall, 1973, 268 pages.

Ornithology Activities

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SUMMARY

Ornithology is an ideal topic to cover when teaching ecological and environmental education concepts. Birds can literally make food chains come to life for students, and some of their more obvious physical adaptations provide clues to the vital roles they have in their communities. Environmental education concepts such as the need of living things for clean air and water, life's dependence on soil, the interaction of living things within an ecosystem, and man's ability to manage, manipulate and change his environment can be addressed by studying ornithology.

ETHICS STATEMENT

Field excursions are an integral part of bird study. These trips allow students to hear and see birds firsthand. Then they can begin asking questions that pertain to their actual experiences. This questioning process is sometimes the beginning of a lifelong pursuit of nature study and appreciation. As an appreciation of the natural environment develops, students often become aware of man-made problems that pose threats to environmental quality. It is at this stage that the student is ready and willing to take action on selected environmental problems.

One problem facing many bird species and seriously threatening Missouri's state bird, the eastern bluebird, is lack of suitable nesting sites. Being a cavity-nester, it has to have a cavity with a hole large enough to allow entrance. These are found in some trees, decaying fence posts, or properly constructed birdhouses. With the introduction of the house sparrow and starling from England, the removal of dead trees from many habitats, and the popularity of the steel or treated fence posts, the abundance of adequate nesting sites has decreased in recent years. This has resulted in a decline in bluebird populations.

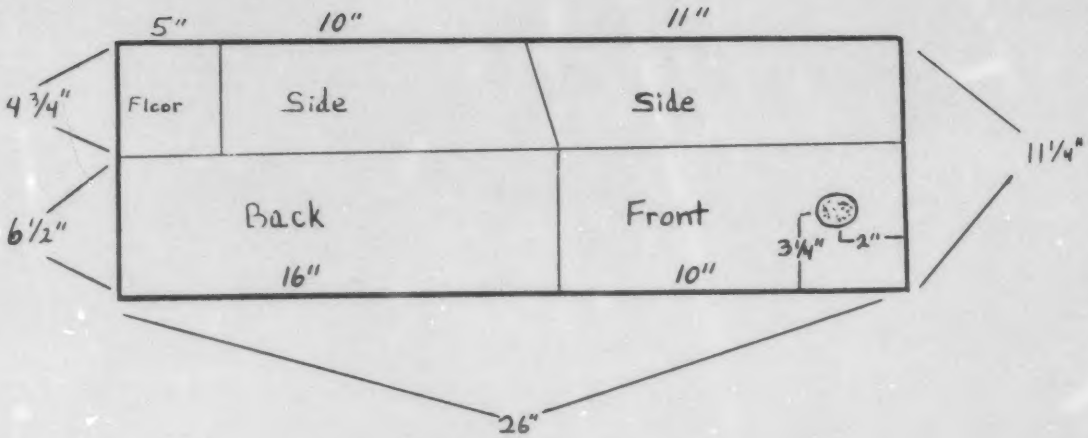
ACTIVITIES

The construction, proper placement, and maintenance of bluebird nesting boxes is an ideal way for students and groups to deal with the problem of adequate bluebird nesting sites. Once the nesting boxes are mounted in a suitable location, it is important that they are properly maintained for the life of the birdhouse. Without the assurance that the more competitive house sparrow and starling are not allowed to nest and proliferate, all efforts to help the bluebird are a waste of time. In fact, unmonitored nesting boxes might do more harm than good. The suggested 1-1/2" entrance hole (see plans) prevents starlings from entering the nesting box. Sparrows are best discouraged by placing the nesting box away from buildings and areas with high concentrations of the bird, and by removal of nests and eggs when they are found in the box. All bluebird nesting boxes should be cleaned out annually so returning bluebirds will have room to build their new nests.

Once students have opened their eyes and ears to birds, they will become aware of problems facing these feathered creatures and want to do something to help them. Proper construction, mounting, and maintenance of bluebird nesting boxes is an excellent way for them to help out.

Bluebird Nesting Box Plans

Tools Needed	Materials Needed
hammer	1- 26" long 1 by 12 (3/4" thick pine)
drill with 1 1/2" bit	1- 8" by 8" piece of plywood
saw	1- 6 1/2" long piece of window or door trim
measuring tape	10-15 six penny nails
pencil	6- 1" wire brads or small nails
	1- 4 3/4" piece of corner trim
	exterior paint or stain
	brush or cloth



Construction of Nesting Box

1. Measure and saw the 1 by 12 according to the diagram.
2. Drill the 1 1/2" hole centered on the front about 2" below the top.
3. Place the front on the shorter edge of the two sides and nail.
4. Center the back on the longest edge of the two sides and nail.
5. Place the plywood lid on the house and reach inside through the bottom with a pencil. Draw a line where the plywood meets the front.
6. Nail the piece of corner trim on the line you have made on the lid. Have the curved edge of the trim facing the front of the lid.
7. Put the lid on the nesting box and nail the window trim on the back of the box so it holds the lid firmly down.
8. Insert the floor and nail it in.
9. Stain or paint the box with an exterior coating.
10. Mount the box in an open, grassy area and enjoy it!

BEST COPY AVAILABLE

Outdoor Education—An Essential Sixth Grade Curriculum

Dwayne Glass, Principal
Jane Rehrer, Science Teacher
Eastgate Middle School
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Kansas City, MO 64117

SUMMARY

S.O.L.A.R. Day (Student Outdoor Learning Activities Retreat) developed out of a need for an all day activity that would be an extension of our sixth grade science curriculum at Eastgate Middle School.

The principal, Dwayne Glass, and the 13 basic skill teachers met at the beginning of the school year to begin to develop an outdoor education program to serve as a basis for conservation activities on their outdoor education day.

Jane Rehrer, one of the sixth grade science teachers, visited another school's outdoor education day that fall to get some ideas of both do's and don'ts for Eastgate's program. She then reported on the program to the rest of the sixth grade teachers.

Several decisions needed to be made early that fall. The first was where this outdoor education was to take place. Earnest Shepherd Youth Center in nearby Liberty was chosen because of its closeness to Eastgate and the fact that this facility was big enough to handle 330 students.

Next, the Conservation Education Consultant and the Outdoor Skills Education Specialist of the Missouri Department of Conservation in our area were contacted and asked to meet with us. The first meeting was used to plan an in-service meeting for sixth grade basic skills teachers, exploratory teachers, instructional assistants, the secretary, the nurse and the librarian. The purpose of this in-service day was not just to give everyone background information on developing an outdoor education program, but also to encourage the teachers to become more enthusiastic about taking part in an outdoor education day.

The main task of developing pre- and post-curriculum for the classroom was left to the sixth grade science teachers. It was decided that conservation concepts, management techniques, outdoor ethics and outdoor skills should become integral parts of this program and should serve as a basis for conservation activities for Eastgate's students on their outdoor education day.

Many more meetings with teachers were held. Such important matters as deciding on a name for Eastgate's outdoor education day, choosing activities to be used, deciding on the placement of activities at Earnest Shepherd, designing the covers for student workbooks and parent handbooks, dividing students into groups, developing task cards for each activity and scheduling activities were discussed.

Students were not only involved in learning about conservation, but they were also involved in making the cover pages, putting the booklets together and making name tags.

The first letters to the Eastgate parents describing S.O.L.A.R. Day and asking for their help were sent out in March. The response from the parents was fantastic. Over 60 parents responded to this letter.

The principal and the sixth grade science teachers developed two workshops for the parents. The first of these workshops was scheduled at noon for non-working parents and in the evening for working parents. The purpose of this meeting was to familiarize parents with the program and to describe the types of jobs available for Eastgate's outdoor education program. The second meeting was held after school at Earnest Shepherd Youth Center to tour the facility and learn the location of all the activities.

Eastgate has had three S.O.L.A.R. Days since that first year. Since that time, this program has continued to change and grow. A hunter education program and an air rifle shooting program have developed as an extra-curricular activity offered to sixth grade students. An all-day aquatic education program which includes casting/angling instruction, fishing, outdoor cooking and a fish print art activity has also evolved.

Eastgate's outdoor education program stresses to students the need for zero impact, problems of littering, importance of recycling and the responsibility for using our natural resources wisely. The S.P.O.R.T. (Sportsmen Protecting Our Resources Together) program is also an important part of this curriculum.

ACTIVITY

This is an example of one of the task cards used at our outdoor education day. The task cards are used to help coordinate the management and ethics concepts taught in the classroom with each activity taught on S.O.L.A.R. Day. For the Animal Track Casting Task Card, the students are taught about the mammals of Missouri, their habits, and the importance of hunting and trapping in the management of these wildlife. Then the students pick their favorite mammal, make a plaster cast of its footprint and learn specific information about the mammal.

Animal Track Casting Unit
Task Card

1. Name the mammal footprint that you used to make a cast.
2. Is this animal an endangered species in Missouri?
3. Name the types of food important for the survival of this mammal.
4. Describe the kind of area in which you would expect to find this mammal.
5. What could you do to prevent this animal from destroying your crops or property?
6. Explain how knowledge of animal tracks is of importance to the sportsman, trapper, hunter, fisherman, hiker and naturalist.
7. Evaluate:
   a. What value has studying animals' tracks been to you?
   b. How can you use this knowledge in the future?
   c. What changes, if any, would you make in this camp unit?

RESOURCES/REFERENCES

Martin, Wayne L. S.P.O.R.T. Ethics Class, Missouri Department of Conservation, Jefferson City, Missouri. 1980.

Marolf, Jeanne, Marge Hagerty and Jim Pyland. Kids Fishing--It's Catching On, Missouri Department of Conservation, Jefferson City, Missouri. 1982.

Pyland, Jim. The Missouri Deer Game, Missouri Department of Conservation, Jefferson City, Missouri. 1984.

FAVORITE QUOTES

"Tell me,
I forget.
Show me,
I remember.
Involve me,
I understand."

Ancient Chinese Proverb

Patterns in Wildlife Habitats

John Paul Shadrach
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SUMMARY

The environment exists in an orderly, patterned fashion. The patterns can be recognized even though they may appear to be haphazard and disorganized. We will be looking at our surroundings today to discover elements of the organization and the importance of knowing about it.

1. Specific plant patterns--Each plant has its own design. Recognition of the design allows you to understand its position in the overall habitat as well as identification for applied use in life.
2. Indicator plants--Recognition of certain plants can indicate mineral content of the soil and rock, presence of water, elevation differences and other physical characteristics.
3. Sound patterns--Recognizing sound patterns can indicate the plant community, season of the year, time of day and physical features of the area.
4. Effects of direction--The direction of the slope of the land and the location of plant types can control the life variety and physical conditions of the community.
5. Past, present and future--the present plant patterns can indicate what occurred in the past and what may occur in the future. Relic plants can indicate conditions existing in the distant past.
6. Tracks and trails--Patterns of trails and tracks can indicate the condition of animal life in the area.
7. Symmetry--By looking for shapes, such as circles and straight lines, we can understand relationships of life forms as well as pattern interference.
8. Geological patterns--By recognizing patterns of geological strata in an area, we can determine the feasibility of its use to us without interfering with natural water and life cycles.
9. Plant patterns that live with us--Due to human interference we have produced plants that make a home with us and interfere with natural life environments.

ETHICS STATEMENT

We must recognize the natural life patterns on earth and how they might be affected by human intervention. If we do not identify and understand these patterns, we will destroy the many natural cycles of wildlife as well as our own patterned way of life.

RESOURCES/REFERENCES

The Missouri Conservationist magazine

National Wildlife magazine

Science and Children magazine (N.S.T.A.)

Reading the Landscape of America by May Theilgaard Watts

Shooting Sports in the College and Community: How To Begin and Carry Out Programs for Young Shooters

Maureen Beuning, RN, MS
St. Cloud State University
St. Cloud, Minnesota 65302

SUMMARY

Shooting Sports for Juniors--A lifetime activity!

A. College level

1. The development of college credit shooting sports courses must begin with the writing and submission of a proposal with course content and objectives. Arrangements are made for use of shooting range facilities, obtain the necessary equipment, such as safety accessories, targets, ammunition and guns, as well as text, training and safety films and handout materials, and instructor or coaching assistance, if needed. Beginning and Advanced Trapshooting courses, and Rifle Marksmanship course development will be discussed, and sample materials distributed.
2. College shooting clubs should be registered with the student union as an approved organization. Student officer and adviser changes, and contact phone number and address should be kept current in the student directory. Shooting club members can be drawn from those who take shooting sports classes, and from the general student body. Activities include coaching and shooting practice, intercollegiate competion, fund raising for trips, and social events.
3. National trap and skeet intercollegiate competition is held each year, sponsored by the Association of College Unions-International (ACU-I). The National Rifle Association (NRA) sponsors year-round competitive shooting programs in rifle, pistol and shotgun events. Colleges and universities can participate in postal competition, and can arrange intercollegiate matches with other colleges in their area.

B. Community Level

1. The NRA Junior Olympic Shooting Program (JOSP) has expanded over the past five years to promote shooting sports on the beginning, intermediate and advanced levels.

The NRA JOSP local kit offers organizational assistance to groups interested in starting community shooting instruction. A wealth of information, instructional materials, award certificates, and more, are available from the NRA.

2. The 4-H organization has worked closely with the NRA in recent years to introduce junior members to a variety of shooting sports: rifle, shotgun sports of trap and skeet, pistol, black powder shooting and archery. Leaders of 4-H groups have been trained to provide instruction to beginners in these sports.
3. Community Recreation Programs in shooting sports can be sponsored by local gun clubs, or organized by interested volunteers. Community service clubs such as the Jaycees, or Boy Scouts, summer camps, etc., all offer the possibility for instruction in shooting sports.
4. A discussion can be held of personal experiences in conducting an NRA JOSP local club for juniors ages 9 to 16 years, NRA JOSP summer trapshooting camps, and college credit classes in shotgun and rifle, as well as a university shooting club, and intercollegiate competition, and shooting sports for the handicapped.

ETHICS STATEMENT

A. Impact to the Environment
   1. Noise is a consideration when dealing with the peaceful use of guns. Typical decibel measurement of a gunshot blast at close range can be from 120 to 140 dB, a noise level that can give pain and is dangerous if exposure continues over any length of time. Ear protection MUST be worn by the shooters themselves as a precaution against hearing loss. Tests of noise levels at outdoor ranges have shown that the decibel level is not harmful to spectators in the background or at a club house. Beyond the perimeters of the shooting range itself the noise from a trap or skeet range sounds remarkably like popcorn popping in the kitchen.
   2. Lead pollution is a consequence only if the shot pellets fall into a body of shallow water with a firm bottom so that the shot remains where it might conceivably be ingested by waterfowl. In

case of such a situation in an impact area, the body of water can be filled in. Lead poisoning of ducks is rare in waters with a muddy bottom where shot pellets will sink. Lead shot is nearly insoluble and indestructible, and will not wash into waterways, so that if it falls on a dry land area it is not likely to cause a problem. Many gun clubs mine the impact area at intervals to retrieve the fallen lead.

3. The targets used in both trap and skeet shooting are made from earth, go to pieces quickly and are ultimately biodegradable.

B. Responsibility of Users
   1. Safety is of foremost concern among shooting sportsmen and women. The various shooting sports have a remarkable safety record, better by far than many of the contact sports.
   2. The shooting sports teach responsibility in care for others, in care of equipment, and in awareness and active concern for the environment.
   3. Because shooting sports are fair, participant activities, an individual learns self-discipline, self-control and self-reliance. These important lessons of personal responsibility have a carry-over to school and other life experiences.

C. THE RAMIFICATIONS TO OUR NATURAL RESOURCES IN THE FUTURE may be related to the safe gun handling, the skill and experience with guns that will make the user a safer, more accurate and responsible, ethical hunter.

ACTIVITIES

Hands-on experience with trapshooting instruction

A. A sheet of trapshooting safety rules.
B. A handout sheet of basic trapshooting suggestions for beginners.
C. Introduction to trapshooting at a range or with the use of a Trius Trap, shotgun, shotshells and clay targets. Ear protection and glasses required.

RESOURCES/REFERENCES

The National Rifle Association
Education and Training Division
1600 Rhode Island Avenue, N.W.
Washington, D.C. 20036
202/828-6371

1. A vast collection of comprehensive and complete materials for use at all stages of shooting instruction, organization and competition.
2. New books and films on rifle, shotgun and pistol fundamentals, excellent for juniors and adults.
3. Materials detailing NRA Juior Olympic Shooting Programs for beginners, intermediate and advanced juniors, and for their instructors and coaches.
4. INSIGHTS magazine, a monthly NRA publication for junior NRA members.

National Shooting Sports Foundation, Inc.
1075 Post Road
Riverside, Conn. 06878
203/637-3618

A variety of instructional booklets, posters, murals, filmstrips, ethics literature, and more.

The AMATEUR TRAPSHOOTING ASSOCIATION
601 West National Road
Vandalia, Ohio 45377

ATA Hall of Fame Youth Trapshooting Program has tests for instructor certification, and materials for setting up trapshooting programs.

Karol Media
22 Riverview Drive
Wayne, New Jersey 07470-3191
201/628-9111

Offers free use of excellent educational films, including the NRA's shooting fundamentals series for rifle, shotgun and pistol, position rifle shooting, and many others.

Remington Arms Company
Shooting Development Specialist
8080 Ward Parkway, Suite 250
Kansas City, Missouri 64114
816/333-1102

An excellent resource for those interested in starting a youth shooting program.

Association of College Unions--International
John Whitehead, Tournament Director
University Union
Central Missouri State University
Warrensburg, Missouri 64093
816/429-4505
816/747-9298

For information on the ACU-I National Intercollegiate Trap and Skeet Tournament held each April and for postal trap and skeet matches.

Hart Luebkeman
Trius Trap
P.O. Box 25
Cleves, Ohio 45002
513/941-5682

Portable trap machine for use where an established trap or skeet range is not available.

National Wheelchair Athletic Association
2107 Templeton Gap Road, Suite C
Colorado Springs, Colorado 80907
303/632/0698

Shooting sports for handicapped athletes.

Chairman Air Gun Committee:
Roger Withrow
118 West Cheyenne Road
Colorado Springs, Colorado 80907
303/632-9415

Mountain States Chapter Trap League (MSCTL)
Attention: Lonnie Adkisson
Paralyzed Veterans of America
Denver Federal Center
Denver, Colorado 80225

United States Olympic Training Center
Administration Office, Helsinki Building
1776 East Boulder Street
Colorado Springs, Colorado 80909
303/578-4500

Ernie Vande Zande:
Director of NRA Junior Olympic Shooting Program.

The Bittersweet Experience

Ellen Massey
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Lebanon, MO 65536

SUMMARY

When allowed to assume complete responsibility and when encouraged and inspired to work in real enterprise, average high school students can achieve seemingly impossible goals--even run a self-sufficient business corporation that published in 10 years' time 40 magazines and two books for the national reading public.

There were many things that combined to make BITTERSWEET an exciting and successful learning experience, but perhaps the one that the students enjoyed and remembered the most was being out of the classroom and in the community. They drove miles to visit elderly people in their homes, yards, gardens, barns, or fields. They worked alongside men and women who taught them how to do such tasks as make molasses or apple butter. They tramped the prairies learning the plants. They went fox hunting Ozark style on jumping mules. They explored caves and rivers learning from old-timers. Then back in the classroom they wrote up their experiences and the knowledge entrusted to them for others to read.

While learning many valuable things themselves, the students were also doing a public service by preserving in words and pictures, the lore, customs, crafts, history, and ecological information about the Ozarks which might otherwise be lost with the passing of the older generation.

Each year 20 to 24 students participated in the English credit class at Lebanon, Missouri, High School. Students could take it for three years. Under the guidance of their teacher/advisor they researched, wrote, illustrated, published, publicized, and marketed their quarterly. They also ran the business.

Though there were many problems, disappointments, temporary failures, and much hard work and plain drudgery, there were rewards and recognition of progress not possible in most classes. The students saw their work in print. They made friends with older people and gained new appreciations for their heritage. They got feedback from the people who helped them. They got fan mail; they felt important. But most of all they knew that what they were doing was important and had a lasting influence.

ETHICS STATEMENT

As the students explored the Ozarks and learned what it used to be like, they became concerned about its fragile ecology. Many chose to write articles which highlighted the problems and dangers existing. They themselves became conservation conscious and passed their feelings on to the readers in articles on such topics as water sources, river uses, and forests.

Meeting people of the Ozarks outdoors was quite a different experience from reading about it or having guest speakers in the class. Students explored Bat Cave with Gene Chambers. As a few bats flew out, frightening the students, Gene told how in his boyhood the bats fogged out at night in the thousands. Completely fascinated, the students hung on every word as Gene described the bats as they used to be and how people used their manure, or guano, for commercial purposes.

Working in the hot July sun chopping the weeds out of the sorghum cane patch alongside of Elvie and Myrtle Hough (both in their 80s) and later on a crisp fall day cutting and stripping the cane, grinding the stalks and cooking down the juice in a big copper pan on the edge of the patch to make the molasses, all under the expert guidance of the older couple, gave the students not only an appreciation of the old-time ways, but a lasting companionship with the Houghs. This project led to others that the couple helped with: making soap outside in a big black kettle; cutting wheat with a hand-held sickle called a grain cradle; visiting the sites of fords and low water bridges and learning not only how they were constructed, but how they improved the lives of the Ozark people.

In early April, Ella Dunn tramped over her land with a knife digging up roots to tell their medicinal use. Interspersed in her talk were glimpses of her life as a girl and young wife in the early 1900s. Dorothy Leake showed the girls the ecology of her spring branch--still unpolluted because it had been in her family for years. By the time the day was over, she and the girls were walking arm in arm through the springtime beauty of her acres.

Conversely, the elder people loved and appreciated the young students. Roy Gage was at first unwilling and wary of teaching modern youth how to strip hickory bark to weave chair seats. But when face to face with their eagerness and obvious admiration in his skill, he was completely captivated by the young people. His enthusiasm expanded as he cut out the strips with his draw knife and made the chair seat. Even rain spattering down gently did not deter him. Everyone was too engrossed in the project to notice--too interested in the stories he was telling.

Outdoor settings like these and dozens of others immediately put everyone at ease. Students learned where events happened; they experienced them. With words, drawings and photographs, they then tried to capture that experience for their readers.

The publication of the quarterly magazine was not the end. Two books based on their writings have been published. Bittersweet Earth has for its theme the partnership of people and land, how each exerted an influence that permanently changed the other. The land dictated how people could make their living and spend their leisure time, affecting their morals, their speech and philosophy. The people began exerting their influence on the land until, within the lifetimes of these older people, the situation is almost reversed. The people dictate what the land is to be.

The students of the Bittersweet class did not like what they saw of human influences. Bittersweet Earth addresses their concern for the readers.

REFERENCES/RESOURCES

Bittersweet, The Ozark Quarterly, 1973-1983.

Bittersweet Country, ed. by Ellen Gray Massey, Doubleday, 1978.

Bittersweet Earth, ed. by Ellen Gray Massey, University of Oklahoma Press, 1985.

The Foxfire Books, ed. by Eliott Wigginton, Doubleday, 1972-1982.

The Salt Book, ed. by Pamela Wood, Doubleday, 1977.

The Fast Track to Flyfishing Fame, Fortune, Fun and Education

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SUMMARY

The presentation will consist of an interdisciplinary methodology for incorporating flyfishing into a curriculum. Flyfishing with its myriad of facets is the ideal subject for outdoor education in the purest sense. The session will include instruction and practicum in the arts and sciences of flyfishing, with orientation to:

1. equipment (tackle and gear)
2. safety
3. mechanics
4. flyfishing strategies
5. limnology and aquatic entomology
6. tying flies
7. ethical practices
8. resources

We are living in a "technocracy" which is rapidly chewing away at our natural resources. Only by our engaging in sound conservation practices will succeeding generations experience a natural environment even as we know it today.

All is not as bleak as could be. Anglers and interested parties all over the country have worked for improvement of some of the environments and ecosystems which have been threatened. Much remains to be accomplished, but flyfishing is a method of angling which contributes to conserving our fisheries resources. It is an established fact among serious anglers that flyfishing can be the best conservation-oriented method of fishing because the fish is usually only lip-hooked and with proper handling the released fish will survive.

Some current practices are beginning to offer the opportunity of a quality fishing experience. Many streams and lakes which contain good fish populations have been declared flyfishing only waters and are patrolled to see that they remain so. Other areas have gone a step further and restricted the areas to flyfishing only, no-kill. This means all fish caught must be returned to the water. Some areas have placed lower quantity-limits or size-limits on their fishing waters. Many

waters (mostly trout and salmon) will be designated for sport-fishing only, no-kill. In some areas where these practices have been implemented, the quality of fishing has shown marked improvement. Yellowstone National Park is an exemplary model of this type of fisheries management and the success is very evident in the quality of fishing that is reappearing there.

ETHICS STATEMENT

Each angler can make a contribution by keeping only those fish needed (if any) and practicing fish-saving release methods on those to be returned to their habitat. The best method by far is to keep hands off and shake the fly loose while the fish is still in the water. The next best method is to use a net, wrap the fish in the mesh to quiet it, remove the fly, and return it to the water. Try to keep hands off the fish at all times.

Another vital practice is to land the fish as soon as possible. Playing a fish until it is belly-up may be the same as killing it. Fish produce toxic lactic acid when they use muscles, just as humans do, but in much larger quantities in proportion to size. A desirable habit is to land the fish as soon as possible and return it to live, not die within a few minutes after it is released and seemingly swims away unharmed.

There are a few courtesies flyfishers (or any other anglers) should always practice. This is especially important with the overcrowded conditions of today.

1. Avoid wading into a pool where another person is fishing.
2. Avoid fishing a pool which is already being fished by another.
3. Avoid cleaning fish in the water. Put the entrails into a trash container or a plastic bag until they can be properly disposed.
4. Obviously, don't litter.
5. Take care to respect private property rights.

Flyfishing is a gentle, quiet sport. Let us keep it so and practice the art with compassion and concern for future generations.

ACTIVITIES

Activities during the session will include practicum in the mechanics of flycasting; on-stream flyfishing strategies and tactics, e.g. reading the water, casting patterns, and handling the flyline on the water; a special emphasis will be placed on "what the fish eat," a methodology for designing and fishing the flies used in the pursuit of "the Great Spotted Racers," e.g. collection and treatment of a sample, flytying orientation and demonstration.

RESOURCES/REFERENCES

Resources for information and assistance with a unit on flyfishing are numerous and varied. Two organizations which can provide invaluable help are:

The Federation of Flyfishers
P.O. Box 1088
West Yellowstone, MT 59758

Trout Unlimited
P.O. Box 1944
Washington, D.C. 20013

Membership in these two organizations is highly recommended.

Periodicals which are of great benefit include:

Fly Fisherman, P.O. Box 3474, Mt. Morris, IL 61054
Fly Tyer, Box 1231, N. Conway, N.H. 03860
Rod & Reel, P.O. Box 370, Camden, Maine 04843

A comprehensive listing of commercial and individual resources will be distributed at the conference. Included on this listing will be several volumes representing the best flyfishing literature.

FAVORITE QUOTES

One thought I always try to implant in the minds of those who seek to gain from an outdoor experience is the idea that "the trip to the fulfillment of a goal is often more meaningful than the attainment of the goal itself." And, Emerson counsels to "be a good animal," a worthwhile goal with a meaningful journey to match!

Using Children's Literature To Enhance Nature Awareness

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Associate Professor of Elementary Education
Arizona State University,
Tempe, Arizona

Rebecca R. Staley
Science Instructional Specialist and
Fourth Grade Teacher
Washington Elementary School District
Phoenix, Arizona

SUMMARY

Children's literature of all kinds has been used as a vehicle for enhancing children's awareness, appreciation and knowledge of the natural environment. Various activities suggested as outgrowths of the literature are experienced by participants to depict an action phase of the environmental ethic. Books, activities and suggestions for use and follow-up with children are offered for these sample themes: astronomy, American Indians, the desert, environmental communication, and rocks, minerals and fossils.

ETHICS STATEMENT

It is assumed that an environmental ethic has knowledge, attitude and physical or action components. Fact books can go a long way to provide up-to-date information about concepts needed to help provide children a knowledge base for developing an environmental ethic.

It is the story or poetry book which uses accurate information about the environment, however, that has the potential to grasp children's emotions, interests and imaginations. These attitudinal dimensions of an environmental ethic are also needed to prepare children to act responsibly toward the environment.

Finally, most forms of literature can lead, with guidance from parents and teachers, to activities which permit children to experience first-hand those topics or concepts introduced vicariously in books. This provides the physical or action dimension of a child's environmental ethic.

ACTIVITIES

Activities, including the reading of selected children's books, which permit children to act in an environmentally ethical manner and which are drawn from the five sample themes suggested above are as follows:

1. Astronomy
   1) Read from The People, native American's versions about star constellations.
   2) Find a group of stars in the night sky and make up your own legend.
   3) Read from The Way to Start the Day.
2. American Indians .
   1) Read from When Clay Sings.
   2) Identify pictographs.
   3) Create an environmental shield using the pictograph form Indians used in their pottery to show ingredients of your environmental ethic.
   4) Read from The Desert is Theirs.
3. The Desert
   1) Read from Gila Monsters Meet You at the Airport.
   2. Discuss how mind sets, prejudices or misconceptions can occur and affect your beliefs and actions with reference to misperceptions people might have about the desert.
   3) Read from Desert Voices.
4. Environmental Communications
   1) Read from Another Way to Listen.
   2) Awareness hike.
   3) Read Sometimes I Dance Mountains with participants dramatizing the words.
5. Rocks, Minerals and Fossils
   1) Read Everybody Needs a Rock.
   2) Find a rock outside.
   3) Experience the rock.
   4) Rock classification with the help of When You Find a Rock.
   5) Read from If You are a Hunter of Fossils.

RESOURCES/REFERENCES

Samples of children's literature for each of the five themes are presented below:

1. Astronomy
   1) Sky Songs by Myra Cohen Livingston, Holiday House, 1984.
   2) Look to the Night Sky by Seymore Simon, Puffin Books, 1977.
   3) The People by Mark Littmann, Hanson Planetarium, Salt Lake City, 1976.
   4) The Way to Start the Day by Byrd Baylor, Scribner and Sons, New York, 1978.
2. American Indians
   1) Before You Came This Way by Byrd Baylor, Scribner and Sons, New York, No Date.
   2) When Clay Sings by Byrd Baylor, Scribner and Sons, New York, 1972.
   3) Buffalo Woman by Paul Goble, Bradbury Press, Scarsdale, New York, 1984.
   4) Moonsong Lullaby by Janake Hightower, Lothrop Lee and Shepard Books, New York, 1981.
   5) Dream Feather by Viento Stan Padilla, Dawne-Leight Pub., Melbrae, CA 1980.
   6) Annie and the Old One by Miska Miles, Atlantic-Little Brown, 1971.
   7) The Gift of the Sacred Dog, Paul Godle, Bradbury Press, Scarsdale, New York, 1980
   8) The Sacred One, Dennis Haseley, Frederick Warne, New York, 1983.
   9) Arrow to the Sun, Gerald McDermott, Puffin Books, 1984
3. The Desert
   1) Gila Monsters Meet You at the Airport by Majorie Weinman Sharman, Macmillan Pub. Co., New York, 1980
   2) Roadrunner by Naomi John, A Unicorn Book, E.P. Dutton, New York, 1980.
   3) The 100 Year Old Cactus, Anita Holmes, Four Winds Press, New York, 1983.
   4) The Desert is Theirs, Byrd Baylor, Scribner and Sons, New York, 1981.
   5) Desert Voices by Byrd Baylor, Scribner and Sons, New York, 1981.
4. Environmental Communications
   1) Sometimes I Dance Mountains by Byrd Baylor, Scribner and Sons, New York, 1973.
   2) The Other Way to Listen, Byrd Baylor, Scribner and Sons, New York, 1978.

3) A Swinger of Birches, Robert Frost, ill. Peter Koeppen, Stemmer House, 1982.
4) Stopping By Woods on a Snowy Evening, Robert Frost, E.P. Dutton, New York, 1978.

5. Rock, Minerals and Fossils
1) Everybody Needs a Rock, Byrd Baylor, Scribner and Sons, New York, 1974.
2) I Am a Rock, Ramon Nieto and Miguel Azaola, Santillana Pub. Co., 1974.
3) When You Find a Rock, Barrie Klaits, Macmillan Pub. Co., New York, 1976.
4) If You Are a Hunter of Fossils, Byrd Baylor, Scribner and Sons, New York, 1980.
5) Sylvester and the Magic Pebble, William Steig, Windmill Books, New York, 1969.

FAVORITE QUOTES

"As we get closer to nature, we find that the subject of our study is not actually nature at all, but life, and the nature of our own selves."

Joseph Bharat Cornell
Sharing Nature With Children
Anamda Pub., 1979

"Sometimes everything being right makes a kind of sound."

Byrd Baylor
The Other Way to Listen
Scribner and Sons, New York, 1979

Youth Leadership Development

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Director
Wilderness Education Association
Rt. 1, Box 3400
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SUMMARY

The Wilderness Education Association promotes a Youth Leadership Development Program in which a foundation toward leadership development is taught to and practiced by young adults.

The classroom environment is the wild outdoors, a very different and often unfamiliar environment, which self-generates excitement and stimulation to the active participant. Through direct experiences, a variety of disciplines and subject areas are addressed.

The key attribute of leadership development is understanding and employing a decision-making process--OATEs. The characteristics of OATEs are:

1. Observation of the situation.
2. Analysis toward a solution.
3. Taking action on a decision.
4. Evaluation of the outcome.

Through a decision-making process students question their methods and gain an understanding that will enable them to carry newly gained knowledge and experience into different lifetime situations.

Components of the leadership development curriculum are:

1. Understanding of one's abilities and limitations,
2. Planning and organizational skills,
3. Group socialization,
4. Environmental behavior,
5. Safety,
6. Fun and enjoyment.

Curriculum components are implemented through a variety of methods, whereby, the real challenges of outdoor living skills, adventure activities and travel modes in and of themselves instill leadership responsibilities.

ETHICS STATEMENT

Issues concerning our country's natural resources require an informed citizenry. The understanding of ecological processes and the practicing of conservation methods will instill attitudes and behaviors for protection and wise use of the valuable wildland resources and make it available to an ever-growing population.

The overall mission of the Youth Leadership Development Program is the direct transfer of outdoor education learning experiences to lifetime activities and citizenry. The individual's personal growth is best summarized by the quotation by Read, "Every good life, however great or small its sphere of activity serves humanity less by what it does than by what it is. This is so because it is not so much what we do for other people as what we enable them to do for themselves. That is a lasting benefit for them."

RESOURCES/REFERENCES

Leadership Training curriculum, Wilderness Education Association.

Leading to Share Sharing to Lead by Robert J. Rogers.

Beyond Boredom and Anxiety by Mihaly Csikszentmihalyi.

III. SESSION DESCRIPTIONS WITH RESOURCES/REFERENCES

Air Gun Programs for Schools and Camps

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Florida Southern College
Lakeland, Florida 33802

Spencer Sartorius
Consultant
Health & Physical Education
Office of Public Instruction
Helena, MT 59601

SUMMARY

Why have a shooting program? Shooting is an excellent recreation sport plus you have the opportunity to teach safe gun handling. Preplanning and promotion are vital to your program. The more expertly you can interpret and justify the positive aspects of a good shooting program to administrators, the better the response will be. To become involved in an air gun program one has only to utilize the nearest recreation room, cafeteria, hallway, gymnasium, or a small field.

The concept of hunter-shooter responsibility is not new. However, there is a growing sense of urgency regarding the conservation and preservation of our natural resources. The responsible shooter does everything he can do to shoot well. One should get to know his gun and ammunition and their limitations.

ETHICS STATEMENT

Teaching outdoor ethics will require a delicate yet discerning approach. Aldo Leopold stated, "The hunter ordinarily has no gallery to applaud or disapprove his conduct. Whatever his acts, they are dictated by his own conscience rather than a mob of onlookers."

RESOURCES/REFERENCES

National Wildlife Federation
1412 16th St. N.W.
Washington, D.C. 20036

The Athletic Institue
200 Castlewood Dr.
N. Palm Feach, FL 33408

National Shooting Sports Foundation
1075 Post Road
Riverside, CT 06878

Daisy Manufacturing Co.
Box 220
Rogers, AK 72756

Remington, Inc.
8080 Ward Parkway
Suite 250
Kansas Ctiy, MO 64114

National Rifle Assoc.
1600 Rhode Island Ave., NW
Washington, D.C. 20036

Animal Signs

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Science Supervisor
St. Louis Public Schools
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St. Louis, MO 63109

SUMMARY

Animal Signs is an experiential program that helps the participant become aware of animal activity even though the animals are unseen. Often those guided on a nature ramble are expecting the wildlife to be highly visible and active. They are disappointed to find that the forest and fields are not stages with creatures waiting to be discovered engaging in some "cute" activity. By discovering the signs of animal activity, the observer becomes aware of the various kinds of animals in the area and gains some appreciation of their daily and seasonal activities.

ETHICS STATEMENT

One of the advantages of this type of field activity is that it does not involve any direct contact with animals and does not cause any damage to the environment. Further, it does provide the individual with a greater appreciation of the variety of animal life and activity in an area and a basic understanding of ecological relationships.

ACTIVITIES

The program consists of a ramble through the woods and fields to look for evidences of animal activity that will help the participant gain an appreciation of the diversity of animal life even if it is unseen.

RESOURCES/REFERENCES

The Wild Mammals of Missouri. C.W. Schwartz and E.R. Schwartz, University of Missouri Press and Missouri Department of Conservation.

The Natural History Guide. H.C. Laun. Alsace Books

Field Guides to animal tracks

Basic Archery

David Tidd
Elementary Physical Educator
Rockport Heights Elementary School
3871 Jeffco Boulevard
Arnold, MO 63010

SUMMARY

Basic shooting techniques will be taught. Be ready to learn to shoot. All equipment will be provided. Money-saving ideas on equipment will be discussed. This may be the help you need to get your program started. Lighten up your program with games and moving targets.

ETHICS STATEMENT

Bowhunters as well as rifle hunters can have an impact on our environment: cutting of tree limbs for better view; using spike tree stands that drive nails into trees for support; building of permanent tree stands that leave an ugly blotch on a tree--besides all the other attributes of a slob hunter. It is our responsibility to protect the environment for future hunters and others--our children.

ACTIVITIES

Basic shooting techniques, tuning a bow, making your own equipment.

RESOURCES/REFERENCES

Basic Archery (Archery Skills Series) Missouri Department of Conservation.

Bear Archery, R.R. 4, Gainesville, FL 32601.

Butterfly Gardening and Conservation Around the Home, School and Nature Center

David Tylka
Urban Biologist
Missouri Department of Conservation
1221 S. Brentwood Blvd.
St. Louis, MO 63117

SUMMARY

Butterflies are one of the most unique, colorful, and aesthetically-pleasing groups of diurnal animals in the entire wildlife kingdom. Like all wildlife forms, they require food, water, and cover. Therefore, butterflies offer a common example found around homes, schools, and nature centers that can be used to explain many natural/environmental concepts. The ecological niche of butterflies and the biotic and abiotic factors influencing their niche are discussed. Specific points in this discussion include adaptations of food gathering in larval and adult forms, specificity of larval plants, nectar production in flowering plants, pollination, energetics involved with flight, warm-blooded (homeothermic) animals versus cold-blooded (poikilothermic) animals, temperature effects/adaptations of the poikilothermic butterfly (including its winter survival), life spans, trophic levels/pyramid of numbers, and predation. Butterflies also offer a unique representative by which to discuss development/complete metamorphosis of insects (our largest class of animals in the world), mimicry, and warning or aposematic coloration. Collecting and rearing techniques are explored, and the ethics of collecting adults and larva are discussed.

Wildlife management targeted primarily for butterflies can be undertaken in the urban environment by growing butterfly gardens. Butterfly conservation centers around furnishing food and cover for the larva (caterpillars) and adults. Increased butterfly productivity is accomplished by planting specific larval food plants (caterpillars will only eat certain plant species). A portion of the home, school, or nature center can focus upon larval food production. Another portion can center around growing nectar-producing plants for the adult butterflies. When people are selecting nectar sources, they should consider--1) the specific attractiveness to butterflies and reduced overlap to the larger stinging bees/wasps, 2) stature, 3) annuals vs. perennials, 4) wildflowers vs. cultivated flowers, and 5) blooming periods. Location of these butterfly gardens should be in full sun, in high visibility areas that can be monitored, and away from all chemical spraying (a good working relationship with custodians/groundskeepers is essential).

To enhance relationships between butterflies and people, identification of common species and groups is desirable. Besides a knowledge of basic lepidopteran anatomy, a good butterfly book (reference books are listed later) and a representative butterfly collection are useful tools used by educators, interpreters, and backyard wildlife enthusiasts.

ETHICS STATEMENT

Butterflies are environmental barometers. Butterfly diversity is proportional to plant diversity. Butterflies are susceptible to insecticides and many environmental contaminants; therefore, their presence generally means that the area is free from these chemicals.

ACTIVITIES

Examination of specimens and the alternatives used to display these specimens are discussed. Collection equipment is presented and utilized, dependent on time and weather conditions.

RESOURCES/REFERENCES

Ebner, James A. 1970. Butterflies of Wisconsin. Milwaukee Public Museum Press, Milwaukee, WI

Heitzman, J. Richard. Common Butterflies and Moths of Missouri. (Soon to be published by the Missouri Department of Conservation.)

Klots, Alexander B. 1951. A Field Guide to the Butterflies of North America, East of the Mississippi. The Peterson Field Guide Series.

Mitchell, Robert T. and Herbert M. Zim. 1962. Butterflies and Moths, A Guide to the More Common American Species. The Golden Nature Guide Series. Golden Nature Press, New York.

Conservation Seeds: An Early Childhood Conservation Education Program

David B. Knisley
Conservation Education Consultant
Missouri Department of Conservation
1221 S. Brentwood Blvd.
St. Louis, Missouri 63117

SUMMARY

Conservation education for young children has been examined in detail in Missouri during the last three years. The findings of that examination of over 1,200 centers will be discussed. The findings of the survey resulted in a comprehensive conservation education program that was made available to Missouri preschool and kindergarten teachers beginning in September 1984. The program consists of an activity book authored by Sherri Griffin, four seasons posters, 24 animal cards and 16 habitat cards. The program is presently in use by more than 3,500 Missouri teachers.

The importance of conservation education for young children and suggested ways for teaching conservation and nature to young children will be discussed. Specific activities will be demonstrated and those attending will be asked to participate.

ETHICS STATEMENT

Conservation education comprises all activities and experiences which result in learning about people's dependence upon, and use or abuse of, natural resources for their needs and wants. Activities and experiences should emphasize feelings rather than knowledge for 3 to 5 year old children. The seeds of awareness, of feeling, of caring will grow into knowledge and wisdom if planted in the young child. Those are the seeds of a conservation ethic.

ACTIVITIES

The activities used in the presentation will be selected from those found in the "Conservation Seeds" program.

RESOURCES/REFERENCES

David Knisley, "Conservation Seeds," Missouri Conservationist, January 1985, pp. 18-19.

FAVORITE QUOTES

"Conservation education should start with the small child and should relate to his daily living habits to instill in him an awareness of the problems. But above all, conservation education should create a reverent attitude for resources and then a deep sense of individual responsibility will follow."

Ernest Swift

Developing Outdoor Classrooms and Tour of Dogwood Diggins Outdoor Education Area

Note: This session is comprised of four separate presentations.

I. OUTDOOR CLASSROOMS--WORTH THE EFFORT

Larry Behrens
Conservation Education Consultant
Missouri Department of Conservation
1040 Third Street
Troy, Missouri 63379

SUMMARY

This session will begin with an introduction to the outdoor classroom concept by showing a newly produced slide program entitled, "Outdoor Classrooms--Worth the Effort." The slide program will attempt to answer five questions: (1) What is an outdoor classroom? (2) How does one go about planning and developing an outdoor classroom? (3) What are some possible components of an outdoor classroom? (4) How can an outdoor classroom be utilized? (5) What can be done about limited space?

Following the slide program, services provided by the Conservation Education Unit for the Missouri Department of Conservation in support of the outdoor classroom program will be surveyed.

ETHICS STATEMENT

The outdoor classroom provides a teaching tool with great potential. Textbook learning can be reinforced by exposing students to the real world around them. Additionally, use of the outdoor classroom can augment studies in all of the school's curricula including science, language arts, art, music and history. Ultimately, students should become more knowledgeable and appreciative of the environment and act more responsibly.

II. ASSISTANCE AVAILABLE FROM THE USDA SOIL CONSERVATION SERVICE IN ESTABLISHING OUTDOOR CLASSROOMS

Robert J. Brejcha
Resource Conservationist
301 West Lexington--Room 260
Independence, MO 64050

SUMMARY

Education is an investment in the future. Over the years, the USDA Soil Conservation Service (SCS) has invested much time and hard work in establishing outdoor classrooms and facilitating their use.

Many more are needed. They are an excellent tool. Imagine a group of students absorbed in a lesson and not one having an ear cocked for the dismissal bell! Hundreds of teachers around the nation can testify that this is what happens in an outdoor classroom.

SCS can advise on planning and developing areas for use. With an office in virtually every county, SCS field personnel are in an excellent position to work with educators one-to-one and through teacher workshops. Many state-level employees are working with state departments of education and colleges and universities on teacher training programs in establishing and developing outdoor classrooms.

Upon request through the local conservation district, SCS is able to assist in providing: (1) a soil capability map and other site specific data, (2) assistance in developing an outdoor classroom plan, (3) complete technical assistance in installing conservation practices, and (4) direct help in applying parts of the plan (i.e. soils information, conservation practices, and land use changes) to direct, meaningful learning and ethic building experiences.

ETHICS STATEMENT

The Soil Conservation Service supports efforts that help individuals to learn, appreciate and become lifetime supporters and practitioners concerning resource and environmental concerns. SCS recognizes the importance of every individual because every person impacts the environment and can assume responsibilities.

Thus, an important goal for SCS is to help individuals of any age instill a resource conservation ethic. This is not an easy task. The challenge rests in working towards an interdisciplinary approach to resource problems. Thus, one important goal for SCS is to help adults and others comprehend Earth as a closed ecosystem--a view that is the key to conservation strategies for now and into the next century. Teaching and thinking about ecosystems is a complex process because vast amounts of data from diverse sources must be put together and meaningfully related back to individuals. Hence the building of an ethic.

In its work in environmental education, SCS links hands with others--conservation districts, other natural resource agencies, teachers, and teacher trainers--to help stimulate interest, provide data and interpretations, develop teachable packages, and give personal assistance. Only in this way can resource conservation get a seat in the mind where the environmental ethic lives.

RESOURCES/REFERENCES

Contact any Soil Conservation Service office for literature and assistance. The phone number is found in the U.S. Government section of the directory. Special publication: SCS has published Conserving Soil, a colorful book of teaching materials for grades 6 through 9. Designed to help make teenagers aware of soil as a fundamental natural resource, the book can be used by teachers of science or social studies.

FAVORITE QUOTES

"The nation that destroys its soil, destroys itself."
Franklin D. Roosevelt

"I can think of few things more important than teaching both children and grown-ups the value of the soil. The good earth is not only the foundation of a nation's economy, it is the basis of civilization itself."
Louis Bromfield

III. DEVELOPING OUTDOOR CLASSROOMS WITH HORTICULTURAL THERAPY

Dr. Richard H. Mattson
Professor, Horticultural Therapy
Department of Horticulture, Kansas State University
Manhattan, Kansas 66506

SUMMARY

The following outline will be used to discuss the process of establishing childrens' gardening programs.

I. Selecting the site and finding resources.
II. Recruitment of children.
III. Designing and planning activities in the garden.
IV. Development of leadership and motivation.
V. Incorporating nature into the garden.

ETHICS STATEMENT

Gardening classes provide children with a greater understanding of the natural world. Gardening activities provide healthful exercise, develop work habits, teach responsibility, promote learning, encourage good citizenship, and reward participants. Gardens are outdoor classrooms that provide experiential learning of natural systems and their interrelationships...soil, water, compost, wildlife are all parts of the living laboratory.

RESOUCES/REFERENCES

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National Wildlife Federation. 1974. Gardening with Wildlife. 1412 16th St., N.W., Washington, D.C. 20036.

FAVORITE QUOTES

"It's a miracle. A little seed--planted, sprouts, grows. In due time it's a flower or something good to eat, or both. It's a miracle. A bunch of ordinary kids. No geniuses. A little guidance, some natural energy, and some careful attention. One person alone couldn't do it. But together we can. We, a mixed bag of personalities, hang-ups and hopes. We. A miracle. How much fun it is to garden. How home-grown things taste better. How wonderful it is to share. How satisfying it is to work hand in hand with miracles."

Pete Seeger

"I want to be on record as believing strongly in this program in Horticultural Therapy. It is one type of what we call adjunctive therapy which brings the individual close to the soil, close to Mother Nature, close to beauty, close to the mystery of growth and development. It is one of the simple ways to make a cooperative deal with nature for a prompt reward."

Dr. Karl Menninger

IV. TOUR OF DOGWOOD DIGGINS OUTDOOR EDUCATION AREA

Bill Mayberry
Science--Outdoor Education Teacher
Potosi High School
303 College
Potosi, MO 63664

SUMMARY

This portion of the half-day program to be held at Potosi High School will consist of a walking tour of the school district's outdoor education area. This 11-acre tract was designed to meet a wide variety of educational needs within the school district and was developed in cooperation with the Design for Conservation Program of the Missouri Department of

Conservation. It will offer participants a chance to see a working outdoor education area. Discussion will focus on the area's development and the rationale behind those decisions, how the area is maintained, and how the area is being used by the district.

ETHICS STATEMENT

Today as the shift in education seems to be more towards high technology, it becomes increasingly important that educators maintain a perspective on the natural world. What area of study is more relevant, yet more ageless, than that of nature. The outdoor classroom should become an integral part of the educational process for our youth as any laboratory or textbook. The outdoors offers students an opportunity to get in touch with nature and the land like few textbooks can. What would the future be if today's youth lost touch with the land?

RESOURCES/REFERENCES

If anyone would like additional information on the Dogwood Diggins Area or the Potosi High School Outdoor Education Program, please don't hesitate to contact a member of the Potosi High School Outdoor Education staff.

Ashbaugh, Byron L. Planning a Nature Center (New York: National Audubon Society, 1973, revised).

Ashbaugh, Byron L. and Kordish, Raymond L. Trail Planning and Layout (New York: National Audubon Society, 1971, revised).

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Roth, Charles E. The Wildlife Observers Guidebook (Englewood Cliffs, New Jersey: Prentice Hall, 1982).

Shomon, Joseph J. A Nature Center for Your Community (New York: National Audubon Society, 1975, revised).

Waterman, Laura and Guy. Backwoods Ethics (Boston Stonewall Press, 1979).

Other Sources:

Missouri Department of Conservation, Outdoor Skills Education Specialists and Conservation Education Consultants, P.O. Box 180, Jefferson City, MO 65102.

University of Missouri Extension Offices, Courthouse, county seats in Missouri.

National Wildlife Federation, 1412 Sixteenth St., N.W., Washington, D.C. 20036.

FAVORITE QUOTES

"I would rather wake up in the middle of nowhere than in any city on earth."

Unknown

Environmental Studies by Bicycle

John H. Settlage
Professor of Science
Northeast Missouri State University
Kirksville, MO 63501

SUMMARY

1. The bicycle is an excellent means of transportation to examine the environment.
2. Slow and direct contact with the environment enhances understanding and appreciation.
3. The interaction of one's mental and physical selves is synergistic.
4. Appropriate technology, human powered transportation, can enlarge experience.
5. Environmental studies includes human activities and artifacts. Humans are a part of nature not apart from nature.
6. Childlike behavior (not childish) enlarges our understanding.

ETHICS STATEMENT

The use of the bicycle as a means of transportation illustrates the value of non-polluting, non-fossil-fueled devices. Travel by bicycle, commuting, studying, or vacationing, is an excellent activity. The nature of exercise promotes physical well-being. The activity has a low environmental impact. Bicycling is economical and effective. By slowing down the rate of experience, the quality of the experience is usually increased. A person tends to experience a sense of well-being when physically active and gentle on the world.

ACTIVITIES

The activities during the session include planning and taking part in a bicycle trip which will illustrate a variety of ways to study the environment. Each participant will supply own bicycle for a planned trip of about three hours duration. Helmets are required.

RESOURCES/REFERENCES

John S. Allen, The Complete Book of Bicycle Commuting, Rondale Press, Emmaus, PA.

John Forester, Effective Cycling, The MIT Press, Cambridge, MA

Bicycling, Commercial Magazine

Bicycling USA, Journal of League of American Wheelman

Wildlife, Botany, Zoology, Geology references

FAVORITE QUOTES

"If there is confinement in my soul, it is a prison of my own making."

"To see the world in a grain of sand and heaven in a wildflower, hold infinity in the palm of your hand, and eternity in an hour."

Extinction: Causes and Consequences

Steve Shupe
Education Consultant
Missouri Department of Conservation
513 Phelps
Houston, MO 65483

SUMMARY

Extinction is a naturally occurring process which normally results from an organism's inability to adapt to changing circumstances. It is thought that most species evolve, thrive and disappear over a period of 25,000 years. Currently, the major concern is that the rate of extinction is being accelerated by the activities of man, particularly habitat depletion. The rapid removal of habitat does not allow the evolutionary process the time normally needed to make the genetic changes that are necessary for species survival.

By most estimates 95% of all species that have ever existed are now extinct. They either completely died out or diversified into one or more new groups. This diversification is not currently occurring because of the rapidity of elimination. In recent years species have disappeared at an alarming rate. By some estimates we may lose as many as 500,000 organisms by the year 2000.

The causes and consequences of the increased extinction potential will be discussed in the workshop. Also, mass extinctions will be defined and current theories concerning the cause of such events will be proposed.

ETHICS STATEMENT

Generally, there are four major arguments proposed concerning species preservation. The first is economic. Plants and animals provide a large and wide variety of resources including foods, fibers and medicines. There is considerable concern that future benefits may be lost before some organisms are identified and studied. Second, there are many people who simply enjoy the beauty and complexity of the natural world. The sights, sounds and smells of nature are benefits without monetary equal. From the long-term standpoint, the ecological argument may be the most significant. The disturbance of complex community structure through the elimination of species may have profound and lasting effects on entire ecosystems. Last is the ethical argument. All species have an inherent right to exist and man's arrogance in his lack of respect for that right is morally wrong.

RESOURCES/REFERENCES

Audio-Visual Aids

The Animal Ark; junior high; 21 min.; film #55152; $12.50; UI

Atonement; senior high; 51 min.; USU

Extinction: A Lesson from the Past; elem.; 14 min; film #53524; $9; UI

Man and Wildlife Film Series; all ages; J. Samson; Field and Stream; 82:4; February 1978

Our Endangered Wildlife; junior high; 51 min; $23; UI

Our Vanishing Wilderness: The Chain of Life; senior high; 29 min.; $14; UI

The Prairie Killers; junior high; 30 min.; $12.50; IU

The Redwoods; 20 min.; $11; UI

Say Goodbye; junior high; 50 min.; $5; PRB

We Can Save the Eagle; junior high; 30 min.; NWF

What Good is a Warbler?; junior high; 13 min.; USFWS or $9.50 from UI

Wildlife--Our Threatened Heritage; junior high; 30 min.; NWF

Will the Fishing Have to Stop?; junior high; 31 min.; EPA

EPA
Environmental Protection Agency
Public Involvement Branch
324 East 11th Street
Kansas City, MO 64106

UI
University of Illinois
Visual Aids Service
1325 South Oak Street
Champaign, IL 61820
217/333-1360

IU
Indiana University
Audio-Visual Center
Bloomington, IN 47401

USFWS
U.S. Fish and Wildlife Service
Federal Bldg., Ft. Snelling
Twin Cities, MN 55111

NWF
National Wildlife Federation
Film Library
26 Washington Place
New York, NY 10003

USU
Utah State University
Chief, Audio-Visual Services
Logan, Utah 84322

PRB
Population Reference Bureau, Inc.
1337 Connecticut Ave., N.W.
Washington, D.C. 20036

For a detailed list of national, state and local environmental organizations write:

Conservation Directory
National Wildlife Foundation
1412 16th St., N.W.
Washington, D.C. 20036

Books

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Allen, Thomas. 1974. Vanishing Wilderness of North America. National Geographic, Washington.

Caras, Roger. 1966. Last Chance on Earth. Chilton Books, Philadelphia.

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Koopowitz, Harold and Hilary Kaye. 1983. Plant Extinctions: A Global Crisis. Stone Wall Press, Washington, D.C.

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Martin, R.D., ed. 1975. Breeding of Endangered Species in Captivity. Academic Press, New York.

Myers, Norman. 1979. The Sinking Ark: A New Look at the Problem of Disappearing Species. Pergamon Press, New York.

Nilsson, Greta. 1983. The Endangered Species Handbook. Animal Welfare Institute, Washington, D.C.

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People: A Self-Endangering Species. National Wildlife Federation, Washington, D.C.

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Simon and Schuster, New York. The Last Days of Mankind: Ecological Survival or Extinction?

Threatened Wildlife of the United States. Washington Bureau of Sport Fisheries and Wildlife. Supt. of Documents, U.S. Government Printing Office, Washington, D.C.

Magazines

Ayensu, E.S. 1978. "Calling the Role of the World's Vanishing Plants." Smithsonian, Nov. Vol. 9, pp. 122-129.

Barbaro, J. 1984. "Enforcing the Endangered Species Law."

Conservationist, Nov./Dec., Vol. 39, pp. 34-35.

Bean, M.J. 1983. "Endangered Species: The Illusion of Stewardship." Natl. Parks, Jul/Aug. Vol. 57, pp. 20-21.

Bioscience. 1978. "Conservationists Sue to Halt Grayrocks Dam Project." July, Vol. 28, p. 432.

Bioscience. 1979. "Endangered Species: How They get Listed." Dec., Vol. 29, p. 755.

Bower, J.N. 1980. "Last Chance for Life." Natl. Parks & Con. Mag., June, Vol. 54, pp. 16-19.

Cahn, R. 1979. "God Committee: Endangered Species Committee Decisions in the Grayrocks Dam and the Tellico Dam vs. the Snail Darter Controversies." Audubon, May, Vol. 81, p. 10+.

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Cook, S.G., et al. 1977. "What They Didn't Tell You About the Snail Darter and the Dam." Natl. Parks & Con. Mag., May, Vol. 51, pp. 10-13.

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Holden, C. 1982. "Endangered Act Reauthorized." Science, June, Vol. 216, p. 1390.

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Natl. Parks & Con. Mag. 1975. "How to Save a Wildflower." April, Vol. 49, pp. 10-13.

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Natl. Wildlife. 1979. "Endangered Species: The List of Last Resort." Dec., Vol. 18, pp. 12-16.

Nisbet, I.C.T. 1978. "Progress Imperils Habitat." Tech R, Nov., Vol. 81, pp. 8-9.

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Smith, R.L. 1976. "Ecological Genesis of Endangered Species." Annual Reviews of Ecology and Systematics, Vol. 7, pp. 33-56.

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USA Today. 1981. "The Earth's Vanishing Species." Aug., Vol. 110, p. 10.

Missouri Department of Conservation Education Unit's Secondary School Program and Deer Game

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Conservtion Education Consultant
Missouri Department of Conservation
1040 Third Street
Troy, Missouri 63379

SUMMARY

Teachers of grades 7-12 can order instructional units on conservation topics for specific curricular areas. Topics presently available from the Missouri Department of Conservation are: The Missouri Deer Game, Biogeography of Missouri, Soil Formation and Distribution in Missouri and Ecology of Missouri Forests. More units are being planned.

Each secondary instructional unit consists of an introduction, basic background information, lesson plans, a glossary, a selected bibliography, transparency masters, BEST (Basic Essential Skills Test), objectives to be addressed, test questions, and a listing of Department education personnel.

ETHICS STATEMENT

The Department's Conservation Education Unit believes that for conservation to become a way of life in Missouri, its citizens need a basic understanding of Missouri's ecology, its resources and resource problems. The challenge is for all of us, but especially for those charged with educating today's youth. It is hoped this series will aid teachers in meeting this challenge.

ACTIVITIES

Participants assume the roles of deer in the Deer Game, a wildlife conservation action game. The unit provides instructions for leading students through a basic understanding of interactions between deer populations and their environment, illustrating the concept of carrying capacity. The outcome of this game is valid since the game is based on actual wildlife research.

RESOURCES/REFERENCES

The Information Section for the Missouri Department of Conservation maintains a comprehensive library with many of the books containing information relative to the instructional units.

FAVORITE QUOTES

"When we try to pick out anything by itself we find it hitched to everything else in the universe."

John Muir

"...what good does it do to get people excited about environmental reform, infused with earthmanship ethics, and wanting certain workable and attainable futures, if they cannot translate their concern into action? We must move from 'What should be done?' to 'How do we do it?'...."

from Living in the Environment
G. Tyler Miller, Jr.,
Wadsworth Pub. Co., 1975

Primitive Fire Making

John S. Adams
Regional Staff Specialist
Missouri Department of Conservation
P.O. Box 180
Jefferson City, MO 65102

SUMMARY

The most important event in the advancement of mankind was when man learned to make and control fire.

The early methods of fire making are still practiced today in primitive societies throughout the world but many of us, that we consider civilized, would perish if we needed fire for survival and were without matches, cigarette lighters or the assistance of technical knowledge.

In this presentation you will learn some of the primitive skills we have lost as we became civilized--such as how, where and when to gather the materials needed to construct a fire starter like the bow and drill; the use of flint and steel and how to make them work for you. Other methods also will be covered.

All persons attending the program will have a hands-on learning experience as we recover parts of our lost past.

RESOURCES/REFERENCES

Wilderness Survival by Berndt Berglund

Bushcraft by Richard Graves

Bill Mayberry
Science/Outdoor Education Teacher
Potosi High School
303 College
Potosi, MO 63664

SUMMARY

The East Ozark region of Missouri is not only an area rich in history, but also rich in natural beauty. This day-long tour will offer participants a chance to sample both.

The region has some of the state's oldest European settlements, with the French colonization going back to the early 1700s. To truly understand the region's development, one must first take a look at the underlying geology, as it is the mineral wealth that led to settlement of the region. Hernando DeSoto was probably the first European to set foot in Missouri, and while he did not find the gold he was seeking, he did just miss one of the great lead deposits of the world.

In 1700, C.A. LaSueur, a Frenchman, launched the first serious mineralogical venture in the Louisiana Territory because of earlier reports by French missionaries of lead deposits in the region. This initiated the first French settlements in the area. The early mining center was Potosi, with such early residents as Moses Austin, Major Andrew Henry, and General William H. Ashley.

The tour will consist of a 100-mile loop through the East Ozarks with stops to include: Elephant Rocks State Park, Fort Davidson Civil War Battlefield, Missouri Mines Historic Site, Bonne Terre Mines, and the petroglyff site at Washington State Park (time permitting).

ETHICS STATEMENT

History is not only a reflection of the past but a mirror of the future. The East Ozarks have seen European settlements for roughly the past 300 years with both good and bad examples of land management.

With today's emphasis on land reclamation, restoration and conservation of natural resources, what does the future hold for the region? Will it be a replay of the past mistakes and abuses? Have we learned anything from past generations? Will future generations be able to use the region's resources and be able to maintain the quality of the environment?

RESOURCES/REFERENCES

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FAVORITE QUOTES

"The natural and civilized worlds must live together or perish separately."

Thoreau

Ropes Course—Adventure Education

Carole McAlister
Physical Education Teacher/K-6th
313 Brightfield
Manchester, MO 63011

SUMMARY

1. Adventure Education is an experience in the outdoors designed to enhance self-concept and self-confidence as well as group cooperation and group cohesiveness.
2. A main objective of new games, initiative exercises, trust activities and a ropes course is to help students learn to deal with the process of risk. It is learning through personal involvement, taking a risk in order to solve a problem or meet a personal challenge.
3. The presentation will cover the process involved in planning and building a ropes course on a limited budget--it can be done!

ACTIVITIES

Participants will engage in initiative exercises, new games, trust activities and the ropes course. These activities will involve movement among tires, spools, ropes, cables, logs, etc. Please wear tennis shoes and comfortable clothing which allows freedom of movement. Long loose pants are preferable to shorts.

RESOURCES/REFERENCES

Cowtails & Cobras
Project Adventure
P.O. Box 100
Hamilton, MA 01936

New Games and More New Games
Dolphin Books
Doubleday & Company, Inc.
Garden City, N.Y. 1976

Silver Bullets
Project Adventure, Inc.
P.O. Box 100
Hamilton, MA 01936

Ed Pierce
Trout Lodge
Route 2
Potosi, MO 63664

The Cemetery—Another Place for Outdoor Study

Gordon S. Griffin
Conservation Education Consultant
806 Sherman Ave.
Charleston, MO 63834

SUMMARY

Cemeteries offer a safe, open and available area for discovery and study. They are an ideal habitat for birds and other wildlife, trees, flowers and other plants. By reading gravestones, students can compute average life spans, discover causes of death and learn the ethnic makeup of a community. Art students can use stones for making beautiful rubbings. Inscriptions and names may be used in literature and vocabulary development. Social studies classes will find preserved records of religious history, economic conditions, population fluctuations, medical history, social upheavals such as war, epidemics and natural disasters such as fires and earthquakes. Natural science students can investigate plant and animal habitat. Cemeteries also can be tied to a study of architecture by examining the gravestones for size, design and the type of stone used.

By planning ahead, students will be ready on the day of the field trip for a quality educational experience. A two- or three-hour field trip will provide a wealth of questions, impressions and data for hours of follow-up activities in various subject areas.

While cemeteries have general similarities, each is unique. A cemetery study not only will reveal the unique qualities of a particular cemetery but also will provide hours of fun and exciting discoveries.

ETHICS STATEMENT

Individuals or school groups wanting to use a cemetery are cautioned to obtain permission. You should treat a cemetery as you do any outdoor site you visit--with respect. Do not litter, damage stones, trample the ground unnecessarily or disturb anything. Students should be cautioned to stay away from precariously leaning stones.

RESOURCES/REFERENCES

Missouri Conservationist, Oct. 1981, pp. 10-11, Missouri Department of Conservation, Education Unit, P.O. Box 180, Jefferson City, MO 65102.

The Future of Outdoor Recreation Depends on You

Jack Lorenz
Executive Director
Izaak Walton League of America
1701 North Fort Myer Drive, #1100
Arlington, Virginia 22209

Jane Rehrer
Science Teacher
Eastgate Middle School
4700 N.E. Parvin Rd.
Kansas City, MO 64117

SUMMARY

Discussion of the need for improved behavior and the reasons why:

Access to recreation lands and waters;
Respect for the rights of landowners and companions;
The quality of the recreation experience; and
Understanding of the interdependencies of all parts of the natural world.

ETHICS STATEMENT

The impact on the environment or improper or irresponsible behavior by the recreationist is often far greater than surface damage appears. Unethical actions are easily spread to the younger generation who, lacking respect for the environment, continue to destroy habitat, exceed fish and game limits, litter and generally wreck havoc on the natural world.

Responsibility of Users--Responsible recreation seekers are those persons who act in the best interest of the resources used and enjoyed, the landowners, their companions and the public with whom they come in contact. Such persons are the major force for greater recreation opportunities and quality experiences.

The ramifications of improper outdoor behavior are vastly underrated. Where one positive action, such as helping a landowner with his chores, may gain one person access to the landowner's property, a single irresponsible act, such as shooting a road sign, may well bring an end to access for everyone. This area will be explored.

ACTIVITIES

Role Playing, where participants are divided into two groups--landowners and recreation seekers--and are given specific problems to solve.

Editorial Writing, where participants are asked to write a 300-500 word essay on the importance of responsible behavior by recreationists, the opinion to be actually submitted for publication after the Conference.

RESOURCES/REFERENCES

Outdoor Ethics Newsletter, Izaak Walton League of America, Inc.

State Hunter Education Coordinators

National Shooting Sports Foundation
P.O. Box 1075
Riverside, CT 06878

Local 4-H leaders and clubs

Boy Scout Fieldbook
Boy Scouts of America
Irving, TX 75038-3096

Missouri S.P.O.R.T. Outdoor Ethics Program, Missouri Department of Conservation, P.O. Box 180, Jefferson City, MO 65102

FAVORITE QUOTES

"Recreational development is a job not of building roads into lovely country, but of building receptivity into the still unlovely human mind."

Aldo Leopold
from A Sand County Almanac

The Use of Live Specimens in Raptor Education

Walter Crawford, Jr.
Executive Director
Raptor Rehabilitation and Propagation Project, Inc.
Tyson Research Center
Box 193
Eureka, MO 63025

SUMMARY

With the increased interest in environmental education, more and more educational programs are being developed to meet the needs and requirements for educating children about the state of our ecosystem. The use of live specimens in many of these presentations is becoming widely adopted. The care, maintenance and professional display of these specimens during these presentations is essential in developing an understanding of these creatures for those attending. It is essential that these specimens be in excellent condition, be maintained properly and properly conditioned and trained for use in front of a live audience. The use of poorly maintained specimens can only cause the audience to lose interest and develop a feeling that can be counter-productive to the entire goal of these presentations.

Professionalism must be stressed in all presentations using live animals since this will be the impact that the students and the general public remember the most. The maintenance of these specimens prior to and after the lecture season is as essential as during the season.

Those individuals who intend to use live specimens for educational presentations should develop an understanding of the creature they are working with and be well trained in their handling in public so as not to leave the public with the understanding that these creatures make good pets. We do not foster the wildlife pet theory and feel that animals used for education should only be used in a scientific and professional manner.

ETHICS STATEMENT

The impact of the environment is closely related to the use of live specimens in our presentations. Allowing people to see predatory creatures up close that they could only see at a distance in the wild can have a dramatic effect on the public. Being able to see these specimens up close allows them to better appreciate the beautiful evolutionary adaptability of raptors and perhaps enhance their feeling towards preserving them. If specimens are maintained in the proper condition, it enables the

individuals attending these presentations to better appreciate these creatures for what they are and it also allows us to explain their importance in the ecosystem and in the food chain from a predatory standpoint.

The responsibility of any individual using live specimens for presentations is immense. It is our responsibility to explain to the people viewing these birds the laws that protect them, the permits that are required and the amount of time, effort and training that is essential in maintaining these creatures in captivity. It is not our goal to foster any of the wildlife pet theories that have been proposed in recent years. We feel that a professional approach to education using live specimens could only enhance the possibilities of the individuals leaving with a better understanding of these creatures.

The importance of raptors to our environment has been well known for many generations. Through our educational programs we hope to enhance the public's ability to understand and appreciate these predatory birds. Only through proper use in public, can these points be made in such a way that the public will have a better appreciation for these creatures. It is essential that everyone today develops a better understanding of the predatory creatures of our ecosystem.

ACTIVITIES

In an effort to educate individuals more about the use of live specimens in educational presentations, we will have on hand numerous species that are used in our educational programs at The Raptor Rehabilitation and Propagation Project, Inc. These birds will be available for close viewing and staff members will be present to explain the maintenance, care and how these specimens are used to increase interest and awareness during our presentations.

RESOURCES/REFERENCES

** High School and up
*** Middle School and up
Elementary School (no asterisk)

Hawk in the Sky by Franklin Russell

Hawks by Charles L. Rippen

Owls by Herbert S. Zim

Birds of Prey by Dorothy Childs Hogman

The Mother Owl by Edith Thatcher Hurd

***The Last Eagle by Dan Mannix

***Source of Thunder: Biography of the California Condor by Roger Caras

**Hawks, Eagles and Falcons of the World by Dean Amamdon and Leslie Brown

***Hawks and Owls of North America by Donald Heitzelman

***Eagles by Leslie Brown

***The Golden Eagle by Gordon Seton

**Peregrine Falcon in Greenland by Jim Harris

***A View of Hawk Mountain by Michael Harwood

***Owls by Eric Hoskings

***Falcons Return by Heinz Meng

Owls by Tony Angell

**Falcons of the World by Tom Cade

**Hawks, Owls and Wildlife by Craighead

**The Biology and Ecology of Raptors by Leslie Brown

**Population Ecology of Raptors by Ian Newton

**The Peregrine Falcon by Derek Ratcliffe

University Outdoor Venture Recreation

Dr. Edsel Buchanan, R/LS Coordinator
Jim Fullerton, Manager--Outdoor Venture Center
Don Greer, Assistant Professor
University of Nebraska at Omaha
Omaha, Nebraska

SUMMARY

This presentation is composed of three inter-related presentations with a focus on 1) Outdoor Venture Programming, 2) The Development Potential of Outdoor Adventure Recreation, and 3) A Hierarchy of Recreational Values.

The University Outdoor Venture Programming presentation will deliver an historical, a current status (nationwide), and a futuristic examination. Developmental and affective concerns will be emphasized. Key words are: attitudes, social, experiential, high risk, and trends.

The Developmental Potential of Outdoor Adventure Recreation presentation has primary concerns with concepts and behaviors, and will focus on four major topic areas; namely 1) Limitations of typical competitive goal structures, 2) Challenge without competition and social comparison, 3) Challenge in cooperation and/or self-reliant contexts (a. self-concept aspects, b. locus of control, c. "flow" potential and enjoyment), and 4) The conservation ethic and cooperation.

The Hierarchy of Recreational Values presentation will link the two previous presentations so as to summarize and to reemphasize the values of recreation in general and outdoor recreation specifically.

ETHICS STATEMENT

University Outdoor Venture Programming is an extension of the "educational arm" and mission of a university. Maximized experiences with minimized environmental impacts is the theme.

Responsibility of users has a focus on the affective rather than more cognitive and psychomotor skills. Social responsibility is seen as a "must" for a true conservation ethic.

Outdoor Venture Programming ramifications to the future of our natural resources are educationally designed and delivered so as to help insure abundant outdoor recreation opportunities for the unlimited future.

RESOURCES/REFERENCES

Bacon, Stephen. The Conscious Use of Metaphor in Outward Bound. Denver: Colorado Outward Bound School, 1983.

Cohen, Michael J. Prejudice Against Nature: A Guidebook for the Liberation of Self and Planet. Freeport, Maine: Cobblesmith, 1983.

James, Thomas. Education at the Edge: The Colorado Outward Bound School. Denver: Colorado Outward Bound School, 1980.

Kalisch, Kenneth R. The Role of the Instructor in the Outward Bound Educational Process: a Manual for Serious Educators Everywhere. Kenneth R. Kalisch, editor and publisher, 1979.

Leopold, Aldo. A Sand County Almanac. New York: Ballantine Books, 1966.

Meier, Joel F.; Morash, Talmage W.; and Welton, George E. High Adventure Outdoor Pursuits Organization and Leadership: Salt Lake City: Brighton Publishing company, 1980.

Owen, Oliver S. Natural Resource Conservation: An Ecological Approach. New York: Macmillan, 1980.

Udall, Stewart L. The Quiet Crisis. New York: Avon Books, 1963.

Waterman, Laura and Guy. Backwoods Ethics: Environmental Concerns for Hikers and Campers. Boston: Stone Wall Press, 1979.

Organizations: American Camping Association, Association for Experiential Education, Outward Bound, National Outdoor Leadership School, AAHPERD (AALR), National Intramural-Recreational Sports Association, National Intramural Sports Council.

FAVORITE QUOTES

"Our environment is not a random array of separate pieces; rather, it is an inter-related community in which an impact on one member affects every other member."

R.W. Peterson

"The conservation of human and natural resources is an indivisible partnership."

Spencer Shaw

"The words economic and ecology stem from the same Greek root; oikos, meaning house. Economics is the management of the house. Ecology is the study of the house. The home is the earth."

R.W. Peterson

"There are at least two possibilities for educating people to understand and appreciate the natural environment which they use for recreation. One is through the formal education system; the other is through recreation programs."

M.T. McLean, Jr.

Water Quality Indicators

Douglas N. Edwards
Environmental Specialist
Missouri Department of Natural Resources
P.O. Box 1368
Jefferson City, MO 65102

SUMMARY

Most water environments are capable of supporting a variety of organisms, depending on the quality of the water. Often, the quality can be determined by the types of organisms present, particularly macroinvertebrates (examples: insects, snails, worms). Some organisms can only be found in clean water while others are commonly found in polluted water. By collecting and identifying macroinvertebrates, students will not only learn about the life present in the water, but will also be able to make statements regarding the quality of the water.

ETHICS STATEMENT

Generally, the numbers of macroinvertebrates present in a body of water are very large and the impact of collecting is negligible. The collector has the responsibility to take only what is needed to satisfy his reasons for collecting. Collectors should always respect the natural appearance of the area.

ACTIVITIES

Activities for this session will include collecting and identifying of macroinvertebrates from three different habitats. Predictions will be made on the quality of the water in each habitat and tests will verify these predictions.

RESOURCES/REFERENCES

Reid, George. 1967. Pond Life--A Golden Nature Guide. Golden Press, New York; Webster Publishing Company, Inc.

Klots, L.C.B. 1966. The New Fieldbook of Freshwater Biology. G.P. Putnam Co., New York.

Wild Edibles

Bill Guinther
Teacher/Biology
672 Castle Cliff
Ballwin, MO 63011

SUMMARY

Wild edibles can be utilized as a means of increasing the sensitivity of students to their environment. Students can be educated on the process of plant identification as well as practical uses of wild plants normally considered troublesome weeds. In addition, survival skills can be enhanced as the students become more familiar with, and comfortable with, the identification and use of wild plants as a food source.

ETHICS STATEMENT

Collection and use of wild edibles as a food source must be done with some caution. The user must be conscious of their supply. Over-collection in a particular area could decrease the species ability to reoccur the following growing season. What constitutes over-collection is dependent on the reproductive capacity of the species, its geographical location, what other organisms require the species presence for survival, the number of samples present in the area at the time of collection, and other factors as well. Never remove all samples of a single species from an area. Always leave some behind as a future source and to maintain the ecological balance of the area.

In addition, be conscious of who owns the land from which you are collecting your samples. In Missouri it is illegal to remove anything from our state parks. It is also illegal to collect from our national parks and forests. If you are thinking about collecting from a county or city park, you should first check with the local municipality. If you want to collect on private property, you should first gain permission from the landowner. Most farmers and other landowners are generally very cooperative. If you follow channels initially, you can save yourself a lot of potential trouble later.

RESOURCES/REFERENCES

Wild Edibles of Missouri by Jan Phillips. (1979) Missouri Department of Conservation.

Stalking the Healthful Herbs by Euell Gibbons

Stalking the Wild Asparagus by Euell Gibbons

Feasting Free on Wild Edibles by Bradford Angier

Wilderness Medicine

William W. Forgey, M.D.
Suite 324, Twin Tower
Merrillville, IN 46410

SUMMARY

Immediate and prolonged wound care in the wilderness setting. This portion of the workshop covers the initial phase of stopping bleeding and shock treatment/prevention for serious wounds; wound cleaning; closure methods; wound after-care--using techniques that minimize liability. Treatment of complications including infection, burns, abcess and cellulitis, puncture wounds, and fishhook removal techniques are included.

Hypothermia. The physics, physiology, pathology, and field treatment of immersion (acute) hypothermia and exposure (chronic) hypothermia will be discussed. A protocol for field management will be developed.

Snake bite and bee stings. The emergency care of poisonous and non-poisonous snake bites and anaphylactic shock caused by stinging insects will be covered, including legal implications of therapy choices.

ACTIVITIES

Portions of this workshop will be hands-on, with practical demonstrations of new bandaging materials and practice of fishhook removal techniques by all participants. Although the techniques discussed are definitive and go beyond common first aid principles, no prior first aid training is required to attend this workshop.

RESOURCES/REFERENCES

Wilderness Medicine, Forgey, Stackpole Books, 1979.

Hypothermia, Forgey, Stackpole Books, 1985.

Handouts of this workshop will be provided which will cover all pertinent points discussed.

FAVORITE QUOTES

"In uncommon or complicated cases...I again advise every man without delay to apply to a Physician that fears God."

John Wesley, 1755
from his Primitive Remedies,
a book of medical treatments by
the founder of the Methodist Church

Wildlife in America: Competing Uses, Common Grounds Over Time

Daniel J. Witter
Resources Planner
Missouri Department of Conservation
P.O. Box 180
Jefferson City, MO 65102

SUMMARY

The Issue: Competing Uses

Public interest in wildlife uses has increased and become more complex in the last three decades. A majority of the general public seems to care about wildlife, and there exists great diversity in the wildlife-related issues that interest people. Three factors generally are recognized as stimulating this heightened awareness of wildlife, and indeed, are the key factors associated with the U.S. citizenry's rush to the outdoors which began in the mid-1950s: (1) more income, (2) more leisure time, and (3) greater mobility.

That so many Americans see fit to devote discretionary time and income to wildlife-related interests has provided both challenge and opportunity to agencies responsible for wildlife management. The ever-growing wildlife interest group provides an unprecedented opportunity to broaden the base of political and financial support for agencies beyond the traditional support base of sportsmen--a group acknowledged as the vanguard of wildlife conservation, but a group on which agencies have been forced to place an increasingly heavy financial burden to maintain management activities. However, reconciling the wide-ranging interests of the merging wildlife constituency has presented agencies a formidable challenge. The expectations and behavior of the traditional harvest-oriented clienteles figure in program decisions, as well as the desires of esthetic-oriented watchers, photographers and natural history enthusiasts. Agencies are having to acknowledge the demands of preservationists and protectionists. Private landowners are seen by many wildlife agencies as the group most in need of being heard if habitat conservation is to progress in coming years. Finally, and perhaps most difficult to respond to, are calls to determine the "needs of the general public," and incorporate these into management.

The Answer: Common Grounds/Compatible Values

Agencies which have accepted the challenge of dealing with the new range of wildlife interest groups have found the outdoor ethics of the groups to represent grounds for cooperation in support of wildlife much more so than grounds for confrontation. Whether the users are bird-watchers, hunters, photographers, fishermen, artists, or backyard bird-viewers, general agreement exists among them as to the ways in which wild animals contribute to the quality of human life, the importance of habitat preservation, the role of hunting in wildlife management, and the desirability of tapping the resources of the general public to finance wildlife management. Extremist groups are excluded from this characterization of cooperation--extremists that would stop all hunting, and those staunchly traditional groups fearful of forfeiting any influence in wildlife management to esthetic-oriented interests. New and creative wildlife programs have grown out of the emerging--new funding approaches (income tax check-offs, sales tax, excise taxes); broadened or heightened nongame programming; and new programs targeted to special populations, e.g., urbanites, private landowners, handicapped, older adults, economically disadvantaged and school children. Future strides in wildlife conservation will be linked to continued growth of this moderate coalition.

RESOURCES/REFERENCES

Mitchell, J.G. 1980. The Hunt. Knopf: New York, pp 243.

Trefethen, J.B. 1975. An American Crusade For Wildlife. Winchester Press, New York, pp 409.

Writing for the Outdoors

David M. Knotts
Program Coordinator
Piney Woods Conservation Center
School of Forestry
Box 6109
Stephen F. Austin State University
Nacogdoches, TX 75962

SUMMARY

As outdoor educators we have a unique opportunity to serve as advocates to protect our resources, educate the layman in understanding natural laws and principles and accept our role as stewards of our natural areas.

Our knowledge and skills of the natural sciences and outdoor activities and prestige as scholars and professionals enable us to serve as public informers, policy makers, and change agents to promote conservation and sound outdoor ethics.

Unfortunately, in many cases our potential for impact has not been optimally developed as we usually limit ourselves to our immediate audiences, i.e; classroom, workshops, etc.

Through the popular media, we have the opportunity to tell the outdoor story to a larger audience. Although the outdoor writing field is considered one of the most difficult to break into, a survey of major outdoor magazines has revealed a need by editors for hands-on how-to articles written by experts in the field.

This presentation will introduce outdoor educators to writing for the popular media. Opportunities in both the traditional and non-traditional outdoor markets will be explored. Under the topic the "Complete Package," participants will learn to increase their opportunities for publication with a well developed query and enhance their text with sidebars, illustrations and photography.

Writers' guidelines and sample article format will be presented at the conference.

ETHICS STATEMENT

Because the written word is perceived by many as an irrevocable truth, the author has the responsibility to present accurate information emphasizing safety and ethics.

RESOURCES/REFERENCES

Conservation Director, National Wildlife Federation, 1412 Sixteenth Street, N.W., Washington D.C. 20036.

Communicating the Outdoor Experience, Outdoor Writers Association, 3101 W. Peoria Ave., Suite A-207, Phoenix, Arizona 85029.

Resource Conservation Glossary, Soil Conservation Society of America.

A Career in Outdoor Writing, Byron Dalrymple, Sports Afield, January 1985.

FAVORITE QUOTES

"I ain't never been lost, but one time over in Kentucky I was a might bewildered for a few days."

Daniel Boone

"Find out in advance what the public will stand for; if it is right and they won't stand for it, postpone action and educate them."

Gifford Pinchot,
First chief of U.S. Forest Service

IV. SESSION DESCRIPTIONS

A Comprehensive Outdoor Education Center Model: The Making of Bradford Woods

Thomas E. Barham
Coordinator, Outdoor Education Programs
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Martinsville, IN 46151

SUMMARY

The evolution, scope and significance of Bradford Woods, Indiana University's 2,300-acre Outdoor Education Recreation and Camping Center, will be the focus of this presentation.

The development of program services will be examined along with populations served, internships, staff training and the BOLT (Bradford Outdoor Leadership Trainee) program. Time permitting, current program evaluation procedures will be discussed.

ETHICS STATEMENT

Serving some 15,000 plus participants per year most certainly has a direct impact on the natural environment of Bradford Woods. Program policies limiting the number of participants we will accept in any one outdoor education program has helped reduce problems related to heavy use. We also rotate the use of program areas which are subjected to heaviest impact. Directly involving students in conservation projects designed to repair and maintain areas is our most effective tool for demonstrating the need for individual and collective sensitivity, awareness and responsibility for our environments--both natural and human made. Most importantly perhaps, is the fact that we integrate into all of our teaching the philosophy that everyone has a direct responsibility to be a good steward of the environment. As educators and teachers this means we must be good role models of environmental ethics and actively demonstrate sound conservation practices.

The quality of life for future generations is directly related to our ability as environmental educators to make our citizenry cognizant of environmental issues. Aware citizens are better equipped to make sound decisions and set goals which will provide an acceptable standard of living and ensure the survival of our planet. Thus, our responsibility as environmental educators is both necessary and urgent and we must live what we believe if we expect others to do the same.

Archaeology in the United States: Conserving the Past

Carol Diaz-Granados
Archaeologist, Educator
7433 Amherst Avenue
St. Louis, MO 63130

SUMMARY

This three-part workshop highlights first, "Archaeology Awareness": What archaeologists do and why. The second segment of this workshop discusses possible classroom and outdoor projects that enhance the students' awareness of prehistory and their natural human heritage. A third segment consists of a slide presentation on the Archaeology of the United States and focuses on the two prehistoric United Nations World Heritage sites, the incredible Hopewell Culture, and ends with a brief coverage of archaeological sites in Missouri. This third part is intended to increase the participants' awareness of the rich archaeological heritage available in most parts of the country and locally for visitation/education purposes.

ETHICS STATEMENT

A major concern of archaeologists/prehistorians/historians/preservationists is the rampant destruction of archaeological sites throughout the country through construction and vandalism. Horizontal expansion of cities is encroaching on an already dwindling number of prehistoric/historic archaeological resources. The only solution to this problem is to increase the public's awareness through education and to try to instill in all people a sense of pride in our natural human heritage. Prehistoric sites are a non-renewable resource.

ACTIVITIES

Activities to help accomplish this goal will be discussed. Some are intended for classroom use; others are more appropriate for outdoors. All activities will increase the students' awareness of the past and the problems and triumphs of our prehistoric ancestors. These include: Artifact Bag, Prehistoric Pantomimes, Time Line, Time Capsule, Experiments in Prehistoric Subsistence, Simulated Digs, plus many more. Handouts will be available which cover additional basic information, resources, and reference book lists.

FAVORITE QUOTES

Awareness of the past, our past, is important to all peoples in dealing with the future. As Will Durant aptly put it, "Most of us spend too much time on the last 24 hours and too little on the last 6,000 years."!

Art Activities and the Conservation Ethic

Jerry Swingle
Elementary Art Teacher
1602 Elk Fork Rd.
Glencoe, Missouri 63038

SUMMARY

Let's consider a moment: How many camping or outdoor education programs fail to list something called "Art and Crafts" as part of the curriculum? Practically none. How many devote the time given to that particular activity to producing a "Craft" item of one sort or another? Practically all. How many devote that time to "Art," usually described as drawing, painting, print making or sculpting? Let us now observe a moment of silence.

Do not misunderstand. Craft activities are fine, and they serve a useful purpose. The kids enjoy the activity, they have a feeling of accomplishment, and they have something they can take home, all worthwhile goals. But somewhere along the line it has occurred to this teacher of art and crafts of quite a few years that perhaps, just perhaps, tnis tradition of making "things" has fallen somewhat short of achieving some equally worthwhile educational goals concerned with the subject of conservation.

The theme of this conference, as I understand it, is "Planting the Seed of a Conservation Ethic." I would like, therefore, to be consistent with that theme by proposing a couple of alternatives to the traditional camp crafts in the form of camp ART activities that just might help accomplish that end. I realize that the word "art" can be unsettling to a lot of people, teacher and pupil alike, if they think they are going to have to produce it and they have no particular skill; but I also believe we can overcome that problem through involvement and by adopting an open-ended attitude of exploring rather than producing.

We will be doing a little sketching and drawing using a couple of different techniques that anyone can do, perhaps a little painting, and, with a bow to the area of crafts and time permitting, we will even transform one of these experiences into "something you can take home" in the form of a block print. Just bear in mind that in this brief interval of art-making in the outdoors we are following in a grand and rather meaningful tradition. The relationship between American artists, trained and untrained, and the American environment is a deep and lasting one. Their curiosity about it, their admiration and awe of it, their appreciation of it, their concern for its preservation go a long way back: from the botanical studies of the Lewis and Clark expedition to the unrivalled work of John James Audubon, Albert Bierstadt, Thomas Moran, and, more recently, Frank Lloyd Wright and Ansel Adams, to name just a few. That, I think one would be forced to admit, is pretty good company.

Conservation Education Program and Services Available from the Missouri Department of Conservation

Harold Thiele
Conservation Education Consultant
7414 Dalgren Drive
Affton, MO 63123

SUMMARY

The Education Unit for the Missouri Department of Conservation, in an effort to reach a greater segment of the Missouri population, has expanded its conservation education programs beginning with the 1984-85 school year. A new early childhood conservation education program, Conservation Seeds, has been developed for preschool through kindergarten teachers. The program consists of a manual of environmental and conservation-related teaching activities based on the four seasons and is supported by resource posters, animal cards, and habitat cards. Learning With Otis, an elementary school conservation education program, is designed for grades 1-6. Each teacher enrolled in this program receives a lesson plan manual, posters, and a classroom quantity of "Notes From Otis," a conservation education newspaper which is mailed out four times during the school year. Teachers of grades 7-12 can order instructional units from the Conservation Education Series. These units treat conservation topics such as "The Ecology of Missouri's Forests." Missouri Conservation Frontiers is an exciting new program for Missourians ages 8 and above. Frontiers is an extracurricular conservation action program in which paricipants earn points upon completion of suggested conservation-related activities. Recognition is received from the Missouri Department of Conservation in the form of patches, medallions, and wall plaques upon completion of various levels of achievement. These programs and materials are provided to Missouri's teachers, youth leaders, and citizens at no cost. In addition to the above, services such as outdoor classroom development and college credit workshops will also be explained.

Environmental Education/Outdoor Education: A Research Based Activity Approach

Elizabeth Hammerman
Director of Outdoor Education
White Pines Ranch
Oregon, IL 61061

Donald Hammerman
Professor of Outdoor Education
Taft Field Campus--NIU
Oregon, IL 61061

SUMMARY

A panel of identified experts in the fields of Environmental Education, Outdoor Education, and Conservation Education were surveyed using a modified Delphi technique to identify major objectives for Environmental Education. Consensus was gained on the following ten objectives: (Taken from: A Delphi Formulation of Environmental Education Objectives by Elizabeth L. Hammerman. Unpublished doctoral Dissertation, Northern Illinois University, 1979.)

1. To treat environmental education in an interdisciplinary manner. To involve social, political, economic, etc. aspects in addition to science.
2. To develop a citizenry that is: 1) knowledgeable about the biophysical and sociocultural environments of which humans are a part; 2) aware of environmental problems and management strategies of use in solving those problems; and 3) motivated to act responsibly to develop diverse environments that are optimum for living.
3. To develop an awareness for man's/woman's place (dependence and interdependence) with the total environment, the relationship of the individual to himself/herself (self-concept), relationship of one person to another (how the individual relates to other individuals), and one's relationship to the natural, global environment.
4. To develop a clear understanding of the human being as an inseparable part of the functioning system that has the ability to alter the interrelationships of the system.
5. To provide experience in working with environmental problems, issues, and concerns and thereby gain experience in the personal valuing process, decision making and political and governmental systems and how to effect appropriate, meaningful and necessary changes in them.

6. To foster a change in attitude and values through a commitment to life styles conducive to maintaining a quality environment.
7. To help individuals and social groups gain a variety of experiences with the total environment to acquire a basic understanding of the total environment, its associated problems and humanity's critical responsibility, presence and role in it.
8. To develop an awareness of the historical, cultural, and natural environments of the communities in which students reside; to lead students to appreciate the heritage associated with their communities and to realize the environmental status of it.
9. To develop an holistic view (systems approach) of the environment which enables one to evaluate the impact of changes on the environment.
10. To develop an awareness of the need for individual responsibility to maintain or improve the environment.

The presenters will highlight significant aspects of the research, give results, and identify conceptual schemes and major concepts that lend themselves to activities using the outdoors as the instructional setting.

Using a curriculum model, the presenters will link basic process skills to concepts and involve participants in outdoor activities that are suitable for classroom teachers to use with elementary and junior high school students.

Following the suggested format, classroom teachers as well as EE program planners and evaluators should find the list of objectives a useful tool.

Learning With Otis

Harold Thiele
Conservation Education Consultant
7414 Dalgren Drive
Affton, MO 63123

SUMMARY

The "Learning With Otis" program was developed for elementary teachers and their students. The program is designed to provide teachers with practical conservation education activities which should be infused into the existing curriculum on a regular basis. Used in this manner, conservation becomes an integral part of each child's total learning experience. While "science" activities are included, the program is not, and should not be considered a science curriculum exclusively. The major program component is an activity book (one per grade level) which is divided into eight relevant topics. A number of lesson plans are included under each topic. Optional "action" and "award" activities have been added to each lesson plan to enhance each primary activity. Students are encouraged to "Learn With Otis" by doing some of these additional activities outside of class. Completed projects are recorded for each participating student on the "Conservation Challenge" class record chart. Teachers may order achievement award certificates from the Conservation Department for each student who completes one project per topic during the school year. As a supplement to the activities book, each teacher enrolled in the program receives classroom quantities of "Notes From Otis," a conservation education student newspaper. Four different issues of the newspaper are provided during the school year with a teacher's edition of the newspaper accompanying each issue. Periodically, posters are provided as teaching aids on appropriate resource topics.

Live Animals in the Classroom

David B. Knisley, Moderator
Conservation Education Consultant
Missouri Department of Conservation
1221 S. Brentwood Blvd.
St. Louis, Missouri 63117

Panel Members:
Walter Crawford, Raptor Rehabilitation Center
David Wissehr, Rockwoods Reservation,
Missouri Department of Conservation
Paul Cook, East Central Protection Region
Missouri Department of Conservation

SUMMARY

The session consists of a panel of experts discussing the use of live animals in the classroom. Emphasis is on collecting and maintaining animals. Appropriate and inappropriate uses, legal aspects, potential problems, and alternatives will be addressed. Living wild animals can be effectively used for educational and rehabilitational purposes; unfortunately, they are often overused and overcollected, and not taken care of properly. Living wild animals should generally be collected, kept, rehabilitated, and used for educational purposes by experts. Uses that are genuinely educational or rehabilitational can be beneficial to animals and to students. Other uses are a disservice to wildlife and may violtate the law. These philosophies and regulations will be explored in detail. Audience participation is encouraged.

Minimal Impact Camping

David M. Knotts, Program Coordinator
Piney Woods Conservation Center

Michael H. Legg, Associate Professor Forest Recreation
School of Forestry
Box 6109
Stephen F. Austin State University
Nacogdoches, TX 75962

SUMMARY

The presentation will involve a three phase approach to minimum impact techniques. First will be a demonstration and discussion of antiquated maximum impact techniques. Second will be a presentation and discussion of appropriate minimum impact techniques to replace the older less environmentally sensitive style of camping. Third will be teaching activities that can be used to illustrate the human impact on natural systems. Specific areas that will be covered include: campsite selection, cooking and fires, field sanitation, trail use and outdoor manners. Minimum impact equipment lists and a typical overnight minimum impact program outline will be furnished at the presentation.

ETHICS STATEMENT

The amount of land available for backcountry camping is limited and the acreage is growing smaller each day. In the United States we are losing about one million acres of land each day to urban growth and development. In addition, the number of people traveling into the backcountry is increasing each year. If there is any hope of maintaining the quality of backcountry recreation experiences, each camper and hiker will have to start practicing minimum impact procedures. Minimum impact camping not only involves minimizing the impact to the natural resources but also techniques to minimize impact on other campers.

Traditional camping and backpacking techniques often resulted in severely deteriorated camping areas and hiking trails. Soil erosion, water pollution, and damage to vegetation were and still are major management problems in many developed recreation areas as well as backcountry areas. In many cases it seems recreationists are literally loving the natural areas to death, often destroying the very features they came to see. There are numerous wilderness areas and parks that have established quotas or otherwise limited visitors due to camper impact on resources and each other. It is the responsibility of each user to minimize his or her own impact, thus protecting the resource for the next user. To not do so will mean even further restrictions on users.

Missouri Conservation Frontiers

Barbara Sandhagen
Conservation Education Consultant
#6 Westmount Dr.
Farmington, MO 63640

SUMMARY

The key points of my presentation will be a history and philosophy of the Missouri Conservation Frontiers Program followed by an explanation of how the program works. In addition, I will present several sample activities from this program.

ETHICS STATEMENT

The Missouri Conservation Frontiers Program is an activity-oriented program dealing with conservation of natural resources. Many projects from the program establish food and cover for wildlife. Conservation ethics are also developed by activities requiring proper outdoor ethics and legal methods to harvest wildlife.

RESOURCES/REFERENCES

Contact: Missouri Department of Conservation
Conservation Education Unit
P.O. Box 180
Jefferson City, MO 65102

FAVORITE QUOTES

"That which can best be learned inside the classroom should be learned there. That which can best be learned in the out-of-doors through direct experiences, dealing with native materials and life situations, should there be learned."

Lloyd Burgess Sharp

"When we try to pick out anything by itself, we find it hitched to everything else in the universe."

John Muir

Pottery From the Ground Up

Sue Gerard
Link Pottery
Route 2
Columbia, MO 65201

SUMMARY

Pre-historic people lined baskets with the sticky mud they found in creek banks and rivers. They could then carry water and store it in these "vessels." Their mud or clay liners shrank when they dried; when they came out of the baskets it was discovered that they would still carry dry things such as grain, berries, nuts, fruit. When they put water in the dry clay vessels they dissolved. But they could use the clay over and over, this way.

One day someone tossed a clay basket into the fire and discovered the MIRACLE OF CLAY: IT BECOMES PERMANENT IN INTENSE HEAT.

People discovered how to make things on a potter's wheel a few thousand years before the birth of Christ.

In undeveloped countries pottery making is essential; water vessels are made pointed at the bottom so they can be supported in the desert sands. Pots are fired on open bonfires yet they can be used to cook food. In our country clay is used in making lipstick, concrete, cardboard, plaster, enamel, dishes, tile, crockery and paper.

Missouri clays are among the finest and are shipped nationwide. A pound of clay costs only 20¢ ('n 25# lots). A pound of porcelain clay costs about 30¢. A kit of tools and clay, to get started in making things, costs about $2.50. It costs only $1 to fire a kiln full of clay objects if your electricity costs 3¢ per kilowatt (Duncan Kiln, 17 1/2" diameter fired to Cone 5 (1950°F).

ACTIVITIES

Participants will learn to dig, refine and work with natural clay. We'll use primitive techniques, such as hand forming and performing "the miracle of fire" without a kiln. Early American pottery will be displayed and discussed. Possibilities for using clay in camp situations and other outdoor programs will be explored.

The North American Indians: Their Crafts and Technologies

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SUMMARY

The Indian crafts and skills workshop is a tribute to the Native Americans and their contributions to technology, art, and outdoor living efficiency. Emphasis is placed on the creation of useful and necessary outdoor tools and skills using natural materials and primitive technology.

The effectiveness of Early Native American technology shows that useful objects essential to outdoor survival skills need not be of the high-tech sort. Many primitive items are not only functional but also artistic and can be an expression of the crafts person's artistic creativity and/or clan identification.

ETHICS STATEMENT

Primitive outdoor living strongly discourages introduction of any high-tech materials into the natural environment. Most, if not all primitive skill accessories (depending on the time period that is being replicated), are produced from renewable or at least non-impacted natural resources.

ACTIVITIES

The participants in this workshop will be introduced to a variety of useful crafts and technologies. Many Native American industries are quite sophisticated and exposure to--even possible mastery of--these crafts is certain to enhance the participants' appreciation for Early Native American technological accomplishments and their own native heritage.

A "rule of thumb" for those embarking on a study of primitive skills technologies is, "If you didn't make it, don't take it." What this refers to is the avoidance of taking implements of plastic, metal, foil, nylon, etc. into the natural environment. "How to" make it is the essence of this workshop.

Using the Consortium Approach to Outdoor Education

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SUMMARY

The Consortium Approach to Outdoor Education/Recreation at TVA's Land Between the Lakes has been utilized since the mid-70s as a technique for providing learning experiences for students from a variety of colleges and universities. The purpose of the Consortium is to provide a unique educational environment for a variety of learning experiences and educational opportunities which are not typically found on the campuses of the participating universities. To facilitate this the Consortium uses resource people available at the Land Between the Lakes (LBL) as well as representatives of recognized programs/facilities relevant to Outdoor Education/Recreation. Several consortia are held each year at LBL with varying emphases and all are of 7-day duration with the exception of the May Consortium which will be the focus of this presentation.

Included in this presentation will be a historical overview of the evolution of the consortium concept, the planning strategy used in developing the schedule of events, the objectives of the Consortium, a sequence of slides depicting the facilities and various activities which are characteristic of the Consortium, an overview of the expenditures and budgetary requirements, as well as the administrative structure of the May Consortium.

ETHICS STATEMENT

An emphasis on environmental ethics and stewardship of our natural resources has been an integral part of the Consortium. Throughout the 10 days, experiences (either directly or indirectly) are incorporated which encourage students to develop and/or continue techniques for the wise use of our natural resources. Specific activities which address this issue are resource management techniques, planning and design of campground facilities, and a discussion of outdoor and professional ethics.

ACTIVITIES

Handouts will be provided which depict the schedule of activities during the May Consortium as well as copies of the objectives of the Consortium. Slides which demonstrate the facilities/activities will be used and visual aids will be incorporated as a method of sharing other pertinent information.

RESOURCES/REFERENCES

The primary resources for the Consortium are the faculty of the participating universities and the staff at LBL. Ms. V. Sue Charon, Central Michigan University, Mt. Pleasant, MI; Mr. Tom Coates, Mars Hill College, Mars Hill, NC; Dr. Chuck Crume, Western Kentucky University, Bowling Green, KY; Mr. Harold Gentry and Dr. Owen Smith, Indiana State University, Terre Haute, IN; Ms. Mary Belle Ginanni, Middle Tennessee State University, Murfreesboro, TN; Mr. Ted Jones, Appalachian State University, Boone, NC; Mr. Jim Carpenter, Consortium/Education Coordinator, LBL; Mr. Larry Contri, Supervisor of Recreation Section, LBL; Dr. Phil McNelly, Branch Chief of Programs and Facilities, LBL, Golden Pond, KY.

FAVORITE QUOTES

"Do not try to satisfy your vanity by teaching a great many things. Awaken people's curiosity. It is enough to open minds; do not overload them. Put there just a spark. If there is some good flammable stuff, it will catch fire."

Anatole France

"I entered the experience with excitement, anticipation and not a little trepidation. I learned about what recreation was. I needed to gain knowledge about the subject...I got that info in spades!! I met some really fine people. Several of the speakers had a really profound influence on me."

Hank C. (student) '82

"This Consortium...was one of the most valuable experiences of my life. I have learned more in these 10 days than I have in some of my classes for an entire semester...working in group planning and programs, learning about other facilities, meeting and living with others and learning about their school, planning and how important it is. I think it's been the best 10 days in my schooling."

LeAnn K. (student) '85

"This actual 'hands on' experience helps me and other students to gain confidence and assurance in our abilities and skills. This will help prepare us for future careers and enable us to tackle a problem in a more logical and systematic fashion. Courses on campus very rarely present this side of learning, yet it is one of the most valuable."

Lynnda H. (student) '82

"I learned a lot about group dynamics at the Consortium. At times in these situations I was frustrated but I tried to adapt and get along and learn from the people in my groups. I see the importance of being able to understand, communicate, work with different people/agencies. The LBL experience was one I wouldn't trade."

Tim V. (student) '85

Why the Wilderness Calls

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SUMMARY

Man and woman in the wilderness is the natural way as it has been throughout history. It has only been in the last 100 years or so that man's everyday life has become removed from this natural relationship. Where once there was a vast wilderness with only a handful of people, now there are handfuls of wilderness with a vast number of demands placed on them. Living in the outdoors was a way of life... everywhere on this planet people were not "owners" of the land but considered themselves stewards of the land. There were spiritual and emotional ties to the land. It was not a "wilderness" to them.

In recent times, political discussions on "wilderness" seem to focus on economic considerations... how many logs won't be cut for house construction, oil that can't be found for fuel, and so on. The wilderness has much more than economic value, but the vast numbers of today's Americans never have the opportunity to experience these values. The inner desire for the outdoors is in everyone, as people walk the streets and sit on park benches. But the outdoors is MORE than that. The American people have long recognized the need for setting aside outdoor areas in their natural state as evidenced by the establishment of Yellowstone as the first national park in the world. But before Yellowstone, there was the vast wild area of Adirondack Park in New York. These were important "first steps," but now the challenge is even greater. It is not just a matter of setting aside wild area "untrammelled by man," but rather to instill the appreciation of these areas in today's society. Wilderness advocates can preach all they want, but people have to have an understanding of the value of these areas before they can become an advocate. Therein lies the challenge... provide an experience to as many as possible to allow them to become wilderness advocates!

The slide/music presentation is designed to provide just a taste of this experience.

ETHICS STATEMENT

The environmental ethics impact of this approach is that the areas we now have will be "better" used. When used they will be treated in a manner that will preserve the atmosphere that the "user" is the first person to be there. Each succeeding user that follows this approach will allow the land to remain in the state that is necessary for a positive wilderness experience. After all, wilderness isn't just a place. It's a state of mind!

Wilderness Environs and Self Discovery

Ed Leoni, Re.D.
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SUMMARY

Wilderness environments provide unique opportunities for self-discovery typically not found in more traditional helping modalities. Natural environments can provide a multitude of experiences which may range along a continuum anywhere from passive to severe. A person wishing to take advantage of wilderness milieu and treatment must first decide the needs of an individual or group and then match them with environments compatible with these needs.

Today's outdoor experiences perhaps emphasize one end of the continuum; that is, challenge often to the exclusion of opportunities found at the opposite end of the spectrum such as relaxation. Nature herself can present serene and complete solitude found in the spray of a waterfall or freshly fallen snow. Nature can also present harsh conditions: the roaring whitewater and a steep precipice. Again, a leader must choose which experience he or she cares to emphasize.

An additional benefit found in wilderness environments is the fact that nature cannot recognize defeat. Therefore, it is the obligation of the leader to focus all attention toward the obstacles presented in nature. Any need for competition amongst individuals can therefore be satisfied through meaningful challenge with the environment. It is an important direction the leader must facilitate; that is, it should be an inward and interpersonal journey and not a competitive free-for-all.

Getting to know one's self as well as others can be as demanding or challenging as any obstacle presented in nature. With careful choosing, a leader can facilitate inter and intrapersonal discovery drawing from the natural environment.

ACTIVITIES

The workshop introducing wilderness milieu involves selflessness and discovery through experience. Therefore, workshop participants are asked to participate in structured activities designed to bring about self-discovery, group sharing and group cohesion. Individual and group activities may involve creative and artistic group activity, tandem canoeing, and activities inviting catharsis.

Index

Adams, John S., "Jerky Making and Smoker Construction," 52
Adams, John S., "Primitive Fire Making," 105
Aune, Michael J., "Why the Wilderness Calls," 140
Barham, Thomas E., "A Comprehensive Outdoor Education Center Model: The Making of Bradford Woods," 125
Behrens, Larry, "Developing Outdoor Classrooms and Tour of Dogwood Diggins Outdoor Education Area," 88
Behrens, Larry, "Missouri Department of Conservation Education Unit's Secondary School Program and Deer Game," 103
Beuning, Maureen, "Shooting Sports in the College and Community: How To Begin and Carry Out Progams for Young Shooters," 64
Braun, Sandra L., "Youth Leadership Development," 80
Brejcha, Robert J., "Developing Outdoor Classrooms and Tour of Dogwood Diggins Outdoor Education Area," 88
Buchanan, Edsel, "University Outdoor Venture Recreation," 115
Cashel, Christine, "Who's in Charge?", 32
Charon, V. Sue, "Using the Consortium Approach to Outdoor Education," 137
Cradick, Thomas R., "Caving as a Tool in Outdoor Education," 44
Crawford, Walter, "The Use of Live Specimens in Raptor Education," 112
Deaton, Don, "The Fast Track to Flyfishing Fame, Fortune, Fun and Education," 73
Diaz-Granados, Carol, "Archaeology in the United States: Conserving the Past," 126
Duncan, Jim, "The North American Indians: Their Crafts and Technologies," 136
Edwards, Douglas N., "Water Quality Indicators," 118
Forgey, William W., "Wilderness Medicine," 120
Gardner, James E., "Caving as a Tool in Outdoor Education," 44
Gerard, Sue, "Pottery From the Ground Up," 135
Gilchrest, Norman L., "How To Add Rappelling to Your Outdoor Education Program," 1
Gilchrest, Norman L., "Legal Liability: Implications for Outdoor Adventure Activities," 15
Glass, Dwayne, "Outdoor Education--An Essential Sixth Grade Curriculum," 59
Griffin, Gordon S., "The Cemetery--Another Place for Outdoor Study," 109
Guinther, Bill, "Wild Edibles," 119
Hale, Alan N., "Safety and Liability," 24
Hammerman, Donald, "Environmental Education/Outdoor Education: A Research Based Activity Approach," 129
Hammerman, Elizabeth, "Environmental Education/Outdoor Education: A Research Based Activity Approach," 129
Jeffries, Phil, "Aquatic Education," 36
Knisley, David B., "Conservation Seeds: An Early Childhood Conservation Education Program," 87
Knisley, David B., "Live Animals in the Classroom," 132
Knotts, David M., "Minimal Impact Camping," 133
Knotts, David M., "Writing for the Outdoors," 123
Legg, Michael H., "Minimal Impact Camping," 133
Leoni, Ed., "Wilderness Environs and Self Discovery," 141
Lorenz, Jack, "The Future of Outdoor Recreation Depends on You," 110
Ludwig, Gail S., "Map and Compass," 53
McAlister, Carole, "Ropes Course--Adventure Education," 108
McFadden, Pat, "Air Gun Programs for Schools and Camps," 82

McKenzie, Dennis, "Canoe Trip Planning," 40
Marolf, Jeanne, "Aquatic Education," 36
Marolf, Jeanne, "Curriculum Development for Conservation," 48
Massey, Ellen, "The Bittersweet Experience," 70
Mattson, Richard H., "Developing Outdoor Classrooms and Tour of Dogwood Diggins Outdoor Education Area," 88
Mayberry, Bill, "Developing Outdoor Classrooms and Tour of Dogwood Diggins Outdoor Education Area," 88
Mayberry, Bill, "Regional History Tour," 106
Ortleb, Edward, "Animal Signs," 83
Phillips, Jan, "Thematic, Interdisciplinary, Experiential Education," 25
Phillips, Sue, "A Circle of Campfire Fun," 35
Rehrer, Jane, "Outdoor Education--An Essential Sixth Grade Curriculum," 59
Rehrer, Jane, "The Future of Outdoor Recreation Depends on You," 110
Ritchie, Paul C., "Outdoor Emergency Survival," 21
Romine, Marc W., "Ornithology Activities," 56
Sandhagen, Barbara, "Missouri Conservation Frontiers," 133
Sartorius, Spencer, "Air Gun Programs for Schools and Camps," 82
Settlage, John H., "Environmental Studies by Bicycle," 94
Shadrach, John Paul, "Patterns in Wildlife Habitats," 62
Shupe, Steve, "Extinction: Causes and Consequences," 96
Smith, Owen R., "Using the Consortium Approach to Outdoor Education," 137
Staley, Frederick A., "Using Children's Literature To Enhance Nature Awareness," 76
Staley, Rebecca R., "Using Children's Literature To Enhance Nature Awareness," 76
Swingle, Jerry, "Art Activities and the Conservation Ethic," 127
Thiele, Harold, "Learning With Otis," 131
Thiele, Harold, "Conservation Education Program and Services Available from the Missouri Department of Conservation," 128
Tidd, David, "Basic Archery," 84
Tylka, David, "Butterfly Gardening and Conservation Around the Home, School and Nature Center," 85
Witter, Daniel J., "Wildlife in America: Competing Uses, Common Grounds Over Time," 121